



1998

Virginia Commonwealth University Undergraduate and Professional Programs Bulletin

Virginia Commonwealth University

Follow this and additional works at: <http://scholarscompass.vcu.edu/vcubulletins>

© Virginia Commonwealth University

Downloaded from

<http://scholarscompass.vcu.edu/vcubulletins/2>

This Bulletin is brought to you for free and open access by the VCU University Archives at VCU Scholars Compass. It has been accepted for inclusion in VCU Bulletins by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

Undergraduate and Professional Programs Bulletin

Academic and Medical College of Virginia Campuses

**Volume LXX
June 1998**

Table of Contents

Contact Information

Academic Calendars

Message from the President

General Information

I. The University	1
II. Admissions	9
III. Expenses and Financial Aid	23
IV. Division of Student Affairs	31
V. University Resources and Services	41
VI. Regulations and General Degree Requirements	49

Academic Programs

VII. Special Academic Programs and Services	61
VIII. College of Humanities and Sciences	65
IX. School of Allied Health Professions	159
X. School of the Arts	179
XI. School of Business	223
XII. School of Dentistry	243
XIII. School of Education	257
XIV. School of Engineering	283
XV. School of Graduate Studies	299
XVI. School of Medicine	301
XVII. School of Nursing	341
XVIII. School of Pharmacy	349
XIX. School of Social Work	365
XX. Division of University Outreach	371

Reference Information

Appendix A Board of Visitors and University Administration	377
Appendix B Rights of Students Under the Family Educational Rights and Privacy Act	381
Appendix C Determination of Student Classification	383
Appendix D Accreditation	389
Appendix E University Centers and Institutes	391
Appendix F AP Credit	395
Appendix G Transfer Module	397
Appendix H Campus Maps and Facility/Service Directory	399

Index of Faculty	405
Index	415

www.vcu.edu

Effective Bulletin/Curriculum Degree Requirements

The *Bulletin* for the academic year a student enters or re-enters a degree program identifies the curriculum degree requirements for that student. Students in continuous enrollment may fulfill the curriculum degree requirements of the *Bulletin* for the year they entered VCU or in the alternative, choose to be subject to the curriculum degree requirements articulated in a subsequent *Bulletin*. In either case, students must fulfill all curriculum degree requirements listed in the *Bulletin* they choose.

DISCLAIMER

The contents of this *Bulletin* represent the most current information available at the time of publication. However, during the period of time covered by this *Bulletin*, it is reasonable to expect changes to be made with respect to this information without prior notice. Thus, the provisions of this *Bulletin* are not to be regarded as an irrevocable contract between the University (or any of its divisions) and the student.

Right Reserved

All rules and regulations set forth in this *Bulletin* will apply until further notice. The University reserves the right to make changes including but not limited to changes in courses of study, fees, rules, regulations, programs, faculty and staff, and classification of students, whenever University authorities, in their sole discretion, deem it appropriate, expedient or wise to do so.

Contact Information

Undergraduate Admissions
821 West Franklin Street
P.O. Box 842526
Richmond, VA 23284-2526
(800) 841-3638, (804) 828-1222
fax (804) 828-1899
<http://www.vcu.edu/ugrad/>

MCV Campus Undergraduate Admissions
1101 East Marshall Street
P.O. Box 980632
Richmond, VA 23298-0632
(804) 827-0152
fax (804) 828-2573
<http://www.vcu.edu/admissions/mcv/mcvindex.htm>

Financial Aid
901 West Franklin Street
P.O. Box 843026
Richmond, VA 23284-3026
(804) 828-6669
fax (804) 828-6187
<http://www.vcu.edu/enroll/finaid/>

Records and Registration
827 West Franklin Street
P.O. Box 842520
Richmond, VA 23284-2520
(804) 828-1341 or 828-1349
fax (804) 828-8121

Office of University Outreach
827 West Franklin Street
P.O. Box 842041
Richmond, VA 23284-2041
(804) 828-8418
fax (804) 828-8172
<http://www.vcu.edu/outreach/>

Office of Academic Support (Academic Campus)
109 North Harrison Street
P.O. Box 842500
Richmond, VA 23284-2500
(804) 828-1650
fax (804) 828-3397

Office of Academic Support (MCV Campus)
1000 East Marshall Street
P.O. Box 980124
Richmond, VA 23298-0124
(804) 828-9782
VTDD (804) 828-4608

Equal Employment Opportunity/Affirmative
Action Services
901 West Franklin Street
P.O. Box 843022
Richmond, VA 23284-3022
(804) 828-1347
fax (804) 828-7201

College of Humanities and Sciences
900 Park Avenue
P.O. Box 842019
Richmond, VA 23284-2019
(804) 828-1673
fax (804) 828-2171
<http://www.has.vcu.edu/>

School of Allied Health Professions
1200 East Broad Street
P.O. Box 980233
Richmond, VA 23298-0233
(804) 828-7247
fax (804) 828-8656
<http://views.vcu.edu/sahp/>

School of the Arts
325 North Harrison Street
P.O. Box 842519
Richmond, VA 23284-2519
(804) 828-2787
fax (804) 828-6469
<http://www.vcu.edu/artweb/>

School of Business
1015 Floyd Avenue
P.O. Box 844000
Richmond, VA 23284-4000
(804) 828-3710
fax (804) 828-8884
<http://www.vcu.edu/busweb/>

School of Dentistry
520 North 12th Street
P.O. Box 980566
Richmond, VA 23298-0566
(804) 828-9183
fax (804) 828-6072
<http://views.vcu.edu/dentistry/>

School of Education
1015 West Main Street
P.O. Box 842020
Richmond, VA 23284-2020
(804) 828-3382
fax (804) 828-1323
<http://www.vcu.edu/eduweb/>

School of Engineering
827 West Franklin Street
P.O. Box 842009
Richmond, VA 23284-2009
(804) 828-3647
fax (804) 828-4269
<http://www.vcu.edu/egrweb/>

School of Graduate Studies
1101 East Marshall Street (MCV Campus)
P.O. Box 980568
Richmond, VA 23298-0568
901 West Franklin Street (Academic Campus)
P.O. Box 843051
Richmond, VA 23284-3051
(804) 828-6916
fax (804) 828-6949
<http://www.vcu.edu/gradweb/>

School of Mass Communications
901 West Main Street
P.O. Box 842034
Richmond, VA 23284-2034
(804) 828-2660
fax (804) 828-9175
<http://www.vcu.edu/hasweb/mac/>

School of Medicine
1101 East Marshall Street
P.O. Box 980565
Richmond, VA 23298-0565
(804) 828-9790
fax (804) 828-5115
<http://views.vcu.edu/html/schofmed.html>

School of Nursing
1220 East Broad Street
P.O. Box 980567
Richmond, VA 23298-0567
(804) 828-5171
fax (804) 828-7743
<http://views.vcu.edu/son/son.html>

School of Pharmacy
410 North 12th Street
P.O. Box 980581
Richmond, VA 23298-0581
(804) 828-3000
fax (804) 828-7436
<http://views.vcu.edu/pharmacy/>

School of Social Work
1001 West Franklin Street
P.O. Box 842027
Richmond, VA 23284-2027
(804) 828-0703
fax (804) 828-0716
<http://www.vcu.edu/gradweb/slwhome.htm>

1998-1999

University Calendar

August 1998

Monday-Tuesday	24-25	Advising and registration, new freshman – Academic Campus
Monday-Wednesday	24-26	MCV Campus orientation and registration
Monday-Friday	24-28	Advising for Academic Campus students
Tuesday-Wednesday	25-26	Advising and registration, new transfer and readmitted students – Academic Campus
Thursday	27	New graduate, certificate student and new/continuing evening student registration – Academic Campus
Thursday-Saturday	27-29	Orientation for new freshman, transfer and readmitted students – Academic Campus
Thursday	27	Classes begin at 8:00 A.M. – MCV Campus
Thursday-Friday	27-September 4	Add/drop and late registration – MCV Campus
Friday	28	Registration, continuing day students – Academic Campus
Saturday	29	Official date for certifying August diploma
Monday	31	Classes begin at 8:00 A.M. – Academic Campus
Monday-Friday	31-September 4	Add/drop and late registration – Academic Campus

September 1998

Monday	7	Labor Day holiday
Wednesday	9	Faculty Convocation at 4:00 P.M.
Friday	11	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays*
Friday	25	Last day for fall degree candidates – Academic Campus to submit graduation applications to their advisers for December degrees. Fall degree candidates – MCV Campus should follow departmental deadlines.
Tuesday	29	Last day for undergraduate students to submit work for removal of incomplete grades from spring semester or summer sessions – Academic Campus

October 1998

Friday	23	Last day to withdraw from a course with a mark of “W” both campuses (except for courses not scheduled for the full semester)
Monday-Friday	26-30	Advising for spring semester – Academic Campus; MCV Campus follow departmental schedule

November 1998

Monday	2	Spring semester Advance Registration begins for all students
Friday	6	Founders Day
Wednesday	25	Thanksgiving holiday begins at 4:00 P.M. – no evening classes will meet
Monday	30	Thanksgiving holiday ends at 8:00 A.M.

December 1998

Friday	11	Last day of classes for fall semester – both campuses, Saturday classes meet December 12
Friday	11	Final date for sign-off on completion of graduate thesis/dissertation for December completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)
Monday-Friday	14-18	Final examinations for fall semester – MCV Campus
Monday-Saturday	14-19	Final Examinations for fall semester – Evening classes
Monday-Tuesday	14-22	Final examinations for fall semester – Academic Campus
Tuesday	22	Holiday vacation begins at 5:00 P.M.
Thursday-Friday	24-25	Christmas holiday
Saturday	26	Official date for certifying December diploma
Monday	28	Holiday Intersession classes begin

Wednesday	30	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – Holiday Intersession*
Thursday	31	New Year's Eve holiday – Intersession classes meet
January 1999		
Friday	1	New Year's Day holiday – Intersession classes do not meet
Tuesday-Wednesday	5-6	Advising, registration and orientation, new freshman – Academic Campus
Tuesday-Friday	5-8	Advising for Academic Campus students
Wednesday-Thursday	6-7	Advising, registration and orientation, new transfer and readmitted students – Academic Campus
Thursday	7	New graduate, certificate student and new/continuing evening student registration – Academic Campus
Friday	8	Registration, continuing day students – Academic Campus
Saturday	9	Holiday Intersession classes end
Monday	11	Classes begin at 8:00 A.M.– both campuses
Monday-Friday	11-15	Add/drop and late registration for all students
Monday	18	Martin Luther King Day (also state holiday – Lee/Jackson/King Day)
Friday	22	Last day for spring degree candidates – Academic Campus to submit graduation applications to their advisers for May degrees
		Spring degree candidates – MCV Campus should follow departmental deadlines
Friday	22	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays*
February 1999		
Tuesday	9	Last day for undergraduate students to submit work for removal of incomplete grades for fall semester – Academic Campus
March 1999		
Friday	5	Last day to withdraw from a course with a mark of "W" both campuses (except for courses not scheduled for the full semester)
Saturday	6	Spring vacation begins at noon – both campuses
Monday	15	Spring vacation ends at 8:00 A.M.– both campuses
		Summer advance registration begins
Monday-Friday	22-26	Advising for fall semester – Academic Campus; MCV Campus follow departmental schedule
Monday	29	Fall semester advance registration begins
April 1999		
Tuesday	27	Classes end for spring semester – Academic Campus – evening classes continue through May 3
Tuesday	27	Final date for sign-off on completion of graduate thesis/dissertation for May completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)
Wednesday	28	Study day – Academic Campus
Thursday-Friday	29-May 7	Final examinations for spring semester – Academic Campus
Friday	30	Last day of classes for spring semester – MCV Campus
May 1999		
Monday-Friday	3-7	Final examinations for spring semester – MCV Campus
Monday-Saturday	3-8	Final examinations for spring semester – evening classes
Saturday	15	Commencement (including 1998 August and December graduates)
Monday	17	Summer sessions begin
Summer Sessions 1999		
May 1999		
Monday-Friday	17-June 4	3-week pre-session
Monday-Thursday	17-June 17	5-week pre-session
Wednesday	19	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week pre-session*
Friday	21	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week pre-session*
Monday	31	Memorial Day holiday

June 1999

Tuesday/Wednesday-Wednesday/Thursday Friday	1/2-July 21/22 11	8-week evening summer session Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 8-week evening beginning June 1 and 2*
Monday-Wednesday Monday-Thursday Monday/Tuesday-Wednesday/Thursday	14-July 14 14-July 22 14/15-August 4/5	4 1/2-week summer session 6-week summer session 8-week evening summer session
Friday	18	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays 4 1/2-week 6-week, and 8-week sessions beginning June 14*
Monday-Thursday Friday	21-July 22 25	5-week summer session Last day for summer degree candidates – Academic Campus to submit graduation applications to their advisers for August degrees Summer degree candidates – MCV Campus should follow departmental deadlines
Friday	25	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session*

July 1999

Monday Thursday-Friday Friday	5 15-August 13 23	Independence Day holiday 4 1/2-week summer session Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week session*
Monday-Friday Wednesday	26-August 13 28	3-week post-session Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week post-session*

August 1999

Friday Friday	13 13	Summer sessions end Final date for sign-off on completion of graduate thesis/dissertation for August completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)
------------------	----------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

* Reasonable accommodations for completion of work missed should be made for students observing religious holidays.

1999-2000 University Calendar

August 1999

Monday-Tuesday	23-24	Advising and registration new freshman – Academic Campus
Monday-Wednesday	23-25	MCV Campus orientation and registration
Monday-Friday	23-27	Advising for Academic Campus students
Tuesday-Wednesday	24-25	Advising and registration new transfer and readmitted students – Academic Campus
Thursday	26	New graduate, certificate student and new/continuing evening student registration – Academic Campus
Thursday-Saturday	26-28	Orientation for new freshman, transfer and readmitted students – Academic Campus
Thursday	26	Classes begin at 8:00 A.M.– MCV Campus
Thursday-Friday	26-September 3	Add/drop and late registration – MCV Campus
Friday	27	Registration,continuing day students –Academic Campus
Saturday	28	Official date for certifying August diploma
Monday	30	Classes begin at 8:00 A.M. – Academic Campus
Monday-Friday	30-September 3	Add/drop and late registration – Academic Campus

September 1999

Monday	6	Labor Day holiday
Wednesday	8	Faculty Convocation at 4:00 P.M.
Friday	10	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays*
Friday	24	Last day for fall degree candidates – Academic Campus to submit graduation applications to their advisers for December degrees fall degree candidates;MCV Campus should follow departmental deadlines
Tuesday	28	Last day for undergraduate students to submit work for removal of incomplete grades from spring semester or summer sessions – Academic Campus

October 1999

Friday	22	Last day to withdraw from a course with a mark of “W” both campuses (except for courses not scheduled for the full semester)
Monday-Friday	25-29	Advising for spring semester – Academic Campus MCV Campus follow departmental schedule

November 1999

Monday	1	Spring semester advance registration begins for all students
Friday	5	Founders Day
Wednesday	24	Thanksgiving holiday begins at 4:00 P.M.– no evening classes will meet
Monday	29	Thanksgiving holiday ends at 8:00 A.M.

December 1999

Friday	10	Last day of classes for fall semester – both campuses, Saturday classes meet December 11
Friday	10	Final date for sign-off on completion of graduate thesis/dissertation for December completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)
Monday-Friday	13-17	Final examinations for fall semester – MCV Campus
Monday-Saturday	13-18	Final examinations for fall semester – evening classes
Monday-Tuesday	13-21	Final examinations for fall semester – Academic Campus
Tuesday	21	Holiday vacation begins at 5:00 P.M.
Saturday	25	Official date for certifying December diploma
Thursday-Friday	23-24	Christmas holiday
Monday	27	Holiday Intersession classes begin

Wednesday	29	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – Holiday Intersession*
Thursday-Friday	30-31	New Year's Eve holiday – Intersession classes meet
January 2000		
Tuesday-Wednesday	4-5	Advising, registration and orientation new freshman – Academic Campus
Tuesday-Friday	4-7	Advising for Academic Campus students
Wednesday-Thursday	5-6	Advising, registration and orientation new transfer and readmitted students – Academic Campus
Thursday	6	New graduate, certificate student and new/continuing evening student registration – Academic Campus
Friday	7	Registration, continuing day students – Academic Campus
Saturday	8	Holiday Intersession classes end
Monday	10	Classes begin at 8:00 A.M. – both campuses
Monday-Friday	10-14	Add/drop and late registration for all students
Monday	17	Martin Luther King Day (also state holiday – Lee/Jackson/King Day)
Friday	21	Last day for spring degree candidates – Academic Campus to submit graduation applications to their advisers for May degrees
		Spring degree candidates – MCV Campus should follow departmental deadlines
Friday	21	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays*
February 2000		
Tuesday	8	Last day for undergraduate students to submit work for removal of incomplete grades for fall semester – Academic Campus
March 2000		
Friday	3	Last day to withdraw from a course with a mark of "W" both campuses (except for courses not scheduled for the full semester)
Saturday	4	Spring vacation begins at noon – both campuses
Monday	13	Spring vacation ends at 8:00 A.M. – both campuses
		Summer advance registration begins
Monday-Friday	20-24	Advising for fall semester – Academic Campus
		MCV Campus follow departmental schedule
Monday	27	Fall semester advance registration begins
April 2000		
Tuesday	25	Classes end for spring semester – Academic Campus; evening classes continue through April 29
Tuesday	25	Final date for sign-off on completion of graduate thesis/dissertation for May completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)
Wednesday	26	Study day – Academic Campus
Thursday-Friday	27-May 5	Final examinations for spring semester – Academic Campus
Friday	28	Last day of classes for spring semester – MCV Campus
May 2000		
Monday-Friday	1-5	Final examinations for spring semester – MCV Campus
Monday-Saturday	1-6	Final examinations for spring semester – evening classes
Saturday	13	Commencement (including 1999 August and December graduates)
Monday	22	Summer sessions begin
Summer Sessions 2000		
May 2000		
Monday-Friday	22-June 9	3-week precession
Wednesday	24	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week precession*
Monday-Thursday	22-June 22	5-week precession
Friday	26	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week precession*
Monday	29	Memorial Day holiday
Tuesday/Wednesday-Wednesday/Thursday	30/May 31-July 19/20	8-week evening summer session

June 2000

Friday	9	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 8-week evening session beginning May 30 and 31*
Monday-Wednesday	12-July 12	4 1/2-week summer session
Monday-Thursday	12-July 20	6-week summer session
Monday/Tuesday-Wednesday/Thursday	12/13-August 2/3	8-week evening summer session
Friday	16	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week, 6-week, and 8-week sessions*
Monday-Thursday	19-July 20	5-week summer session
Friday	23	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session*
Friday	30	Last day for summer degree candidates – Academic Campus to submit graduation applications to their advisers for August degrees Spring degree candidates – MCV Campus should follow departmental deadlines

July 2000

Tuesday	4	Independence Day holiday
Thursday-Friday	13-August 11	4 1/2-week summer session
Friday	21	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week session*
Monday-Friday	24-August 11	3-week post-session
Wednesday	26	Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week post-session*

August 2000

Friday	11	Summer sessions end
Friday	11	Final date for sign-off on completion of graduate thesis/dissertation for August completion of degree (check with program director regarding internal schedules for submission of copy, defense, and approval)

* Reasonable accommodations for completion of work missed should be made for students observing religious holidays.

Message from the President



Dear Student:

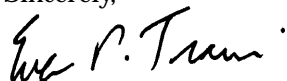
It is my pleasure to welcome you to Virginia Commonwealth University.

With more than \$96 million in annual research funding, VCU has been ranked by the Carnegie Foundation as one of the nation's top research universities and is one of only three such universities in Virginia. VCU's impact on education, the economy, and the quality of life in the Commonwealth is significant. Its degree programs encompass the arts, business, education, engineering, the humanities, the sciences, social work, and all the health professions. VCU's Medical College of Virginia Campus and MCV Hospitals are among the most comprehensive in the nation. In collaboration with the business and government communities in the state, the University also is developing the Virginia Biotechnology Research Park, one of the major catalysts for Virginia's emerging biotechnology industry.

When you join VCU, you will be studying with a diversity of students who are pursuing undergraduate, graduate, professional, and doctoral degrees. Credit and noncredit courses for full-time and part-time students, and a number of programs available through technology, serve all VCU students. You will benefit from our extensive research and public service, athletic and cultural activities, libraries, and student and recreational centers. Our capable and committed faculty are ready to assist you, augmented by an array of support services designed to help you achieve your potential.

VCU is an extraordinary institution. We are proud to have you here as you pursue your educational goals.

Sincerely,



Eugene P. Trani
President

Virginia Commonwealth University

The University Community

With more than \$96 million in annual research funding, Virginia Commonwealth University is ranked by the Carnegie Foundation as one of the nation's top research universities and is one of only three such universities in the Commonwealth. VCU's teaching, research, public service, and patient care mission supports full-time and part-time students and faculty of diverse backgrounds. The University also contributes to the local, state, national, and international communities through its scholarly activities, its diverse educational programs, and its public service and patient care initiatives.

Located in Richmond, the capital of Virginia, VCU is composed of two campuses. The 50.5-acre Academic Campus is situated in Richmond's historic Fan District. The 51-acre Medical College of Virginia Campus, which includes MCV Hospitals, is located two miles east in the financial, commercial, and governmental district of downtown Richmond. Of the University's 151 buildings, 32 were built before 1900. Fifty-four buildings are national historic landmarks or lie within a historic district.

VCU was established in 1968 by an act of the Virginia General Assembly, which merged the Medical College of Virginia with Richmond Professional Institute to form the new University.

MCV was founded in 1838 as the medical department of Hampden-Sydney College. It became an independent institution in 1854. In 1860, when Virginia appropriated \$30,000 for MCV's first hospital, it became a state-supported institution.

RPI was established in 1917 as the Richmond School of Social Work and Public Health. In 1925, it became the Richmond Division of the College of William and Mary. Its name was changed to Richmond Professional Institute in 1939; in 1962, it separated from William and Mary, becoming an independent state institution.

VCU is governed by a 16-member Board of Visitors appointed by the Governor of Virginia. Board members, who come from the business, professional, civic, and health-care communities of Virginia, serve four-year terms. Members may be appointed for an additional four-year term at the Governor's discretion.

VCU is organized into the Divisions of Academic Affairs (which includes the Provost's Office), Advancement, External Relations, Finance and Administration, Health Sciences, and Research and Graduate Studies. The University offers 157 baccalaureate, master's, professional, doctoral, and post-graduate certificate degree programs through the College of Humanities and Sciences, which includes the School of Mass Communications, and

the Schools of Allied Health Professions, the Arts, Business, Dentistry, Education, Engineering, Medicine, Nursing, Pharmacy, and Social Work. Forty-four of the University's programs are unique in Virginia, and a number of its professional, graduate programs have been nationally ranked for excellence by *U.S. News & World Report*.

VCU's programs include the Bachelor of General Studies offered through the Division of University Outreach of the Academic Affairs Division and the Master of Interdisciplinary Studies offered through the Division of Research and Graduate Studies. Several programs provide off-campus students the opportunity to earn degrees through telecommunications and instructional technology.

More than 22,700 students attend VCU and each year the University awards more than 4,000 degrees. Thirty percent of VCU's students represent minority groups, 60 percent are women, and 39 percent are part-time students. The student body represents 48 states and 68 different countries; in Fall 1997, 486 international students enrolled at the University.

With an annual budget of \$1.1 billion, VCU and its affiliate organizations constitute a significant economic enterprise in the Richmond area. More than 13,800 faculty and staff, which includes 1,560 full-time faculty and 5,736 classified staff, make the University and the teaching hospital the city's single largest employer. Employees and students together spend approximately \$322 million a year in the local economy. MCV Hospitals and VCU's physicians provide more than \$100 million worth of indigent health-care services annually. Two-thirds of VCU's 100,000 alumni live and work in Virginia.

VCU's economic impact includes a master-site plan that calls for capital expansion into under-used sections near the campuses. The plan has established architectural guidelines for future construction, which were developed in collaboration with the surrounding community. Current projects under construction represent more than \$125 million, and the value of authorized projects is nearly \$70 million.

VCU is in progress with *A Strategic Plan for the Future of Virginia Commonwealth University*, a long-range planning initiative begun in 1993 and now in its second phase. The goal of VCU's strategic plan is to enhance its stature as one of the nation's leading research universities as well as to continue its contribution to community and individual development, particularly through collaborative initiatives and partnerships with the community.

One of the University's most recent strategic collaborations is the School of Engineering, which has been an important factor in attracting the microelectronics industry to Virginia. Motorola, Inc., one of the major companies to build in Central Virginia, has donated \$6.5 million to the School of Engineering and the Virginia Microelectronics Center based at VCU. The University also is developing the Virginia Biotechnology Research Park in collaboration with business, civic, and government leaders. When it is fully developed, the Research Park will cover 34 acres in downtown Richmond and employ an estimated 3,000 professional and technical personnel.

VCU's MCV Campus supports the Massey Cancer Center, a National Cancer Institute-designated cancer center; the Ambulatory Care Center; and a number of partnerships within the greater health-care community that support VCU's mission of health-care education, research, and patient care. The campus' affiliated Medical College of Virginia Hospitals is one of the most comprehensive teaching hospitals in the country. In 1998, it was ranked in the annual study, *100 Top Hospitals: Benchmarks for Success*, which identifies U.S. hospitals that deliver the highest quality and most cost-efficient health care. In 1996, the Virginia General Assembly passed legislation that established the MCV Hospitals Authority. This change in its management and governance is allowing the teaching hospital to compete more effectively in a rapidly changing marketplace and to enhance the quality of the delivery of health care in the community.

In 1998, VCU met the \$125-million goal of its second comprehensive fund-raising campaign, Partners for Progress, well ahead of schedule. With a focus on generating increased giving among alumni and greater financial support for student scholarships, faculty endowments, and capital projects, Partners for Progress will be completed at the close of 1999.

Alumni of the University

VCU has 100,000 alumni, almost a third of whom are graduates of the MCV Campus. More than 40,000 alumni live in the Richmond metro area and 60,000 live in Virginia, contributing to its growth and quality of life.

Among its alumni, VCU can count a Nobel Prize winner, an Oscar winner and several Emmy winners, CEO's of national corporations, a current best-selling author, the White House interior designer, and many others whose accomplishments are well known. Just as important, VCU graduates make up the majority of pharmacists and dentists in Virginia, a major proportion of the state's nurses and physicians, many of its teachers, artists and performers, and its law enforcement personnel. VCU alumni are striving and achieving in every field of endeavor, using the knowledge and experience they gained at VCU and building pride in their University.

Alumni support their University through the VCU Alumni Association and the MCV Alumni Association of VCU along with groups such as the African-American Alumni Council and the Association of Real Estate

Alumni. Among the Associations' many services are their two alumni magazines, *Shafer Court Connections* for graduates of the Academic Campus and *Scarab* for MCV Campus alumni. The MCV Alumni House provides meeting and event space daily for faculty, students, and University administrators as well as for alumni gatherings while the VCU Alumni Association Board Room in the University Student Commons serves all campus groups.

Reunions, student recruitment and mentoring, externships, professional workshops and networking events, recognition programs honoring alumni and student achievement, parents' weekends, and Commencement breakfasts are some of the programs alumni plan and participate in to support their University. Both Associations support a variety of scholarships and are planning more endowments for the years ahead. Alumni chapters are beginning to form as the newest method of reaching out to alumni in cities across the country. Among the many services that the Associations offer alumni are group major medical insurance, low-cost affinity credit cards and long-distance calling services, and excellent discounts on national hotel and rental car firms.

For further information about the MCV Alumni Association, call (804) 828-3900; for the VCU Alumni Association, call (804) 828-2586. You may also e-mail the University at vcu-alum@vcu.edu or browse the VCU alumni Web site at <http://www.vcu.edu/alumni>.

Mission of the University

VCU is a public, urban, research university, supported by Virginia to serve the people of the state and the nation. The University provides a fertile and stimulating environment for learning, teaching, research, creative expression, and public service. Essential to the life of the University is the faculty actively engaged in scholarship and creative exploration activities that increase knowledge and understanding of the world and inspire and enrich teaching.

The University is dedicated to educating full-time and part-time students of all ages and backgrounds in an atmosphere of free inquiry and scholarship so they may realize their full potential as informed, productive citizens with a lifelong commitment to learning and service.

The University serves the local, state, national, and international communities through its scholarly activities, its diverse educational programs, and its public service activities. As an institution of higher learning in a metropolitan center that is also the state capital, the University enjoys unique resources that enrich its programs. The University also contributes its intellectual and creative expertise in the development of innovative approaches to meet the changing needs of our society.

The goals of Virginia Commonwealth University in carrying out its mission are:

- to provide undergraduate education that includes a broad and rigorous foundation in the arts, sciences, and humanities, and explores the ideas and values of humankind;
- to offer nationally and internationally recognized professional and graduate programs leading to doctoral,

- master's, and other terminal and advanced degrees in the professions, sciences, humanities, and arts;
- to foster a scholarly climate that inspires creativity, a free and open exchange of ideas, critical thinking, intellectual curiosity, freedom of expression, and intellectual integrity;
 - to expand the boundaries of knowledge and understanding through research, scholarship, and creative expression in the sciences, arts, humanities, and professional disciplines;
 - to value and promote racial and cultural diversity in its student body, faculty, administration, and staff to enhance and enrich the University
 - to develop and sustain a faculty of the highest quality by providing an environment conducive to their achieving and maintaining national and international stature and by continuing to attract both recognized scholars and other outstanding individuals with a high potential for scholarly achievement and excellence in teaching;
 - to provide an optimal environment for educating and training health care professionals, for conducting research to improve health care and delivery, and for meeting the needs of patients and the community in a comprehensive health care setting;
 - to use the urban environment as a laboratory for studying and developing new approaches to problems pertaining to the public and private sectors;
 - to support (through its commitment to public exhibitions, performances, and other cultural activities) the imaginative power of the liberal, visual, and performing arts to express the problems and aspirations of humanity and to enrich the lives of individuals;
 - to develop innovative programs for continuing education that establish permanent intellectual connections between the University and its constituents, enhance professional competence, and promote dialogue on public issues;
 - to offer diverse opportunities for individuals to benefit from higher education through a variety of avenues including flexible scheduling for part-time undergraduate and graduate students, open admission for nondegree-seeking students with appropriate preparation, advanced degree programs for working professionals, selected programs in diverse locales, admission of graduates with appropriate associate degrees in arts or sciences, and support programs for specially admitted students;
 - to promote interdisciplinary studies within the University to bring new perspectives to bear on complex problems, and mobilize creative energies and expertise in meeting the needs of society and individuals through its unique role as Virginia's major urban university.

MCV Campus Mission

The Medical College of Virginia Campus is an integral part of Virginia Commonwealth University. The five academic schools and teaching hospital of the MCV Campus serve the needs of the citizens of Virginia for:

- transmission of knowledge related to health services;

- continuity in the supply of health-care professionals;
- accessibility to comprehensive and quality health-care services;
- development and dissemination of new knowledge for the advancement of the health sciences.

The MCV Campus is committed to educational programs directed toward meeting the state's health needs. Programs are dedicated to maintaining and updating the competency of health professionals as well as preparing graduates to enter the health professions. Educational programs are supported by several academic disciplines, the teaching hospital, carefully selected off-campus health facilities, and an institutional commitment to effective teaching.

The MCV Campus also is committed to a comprehensive program of patient care: to demonstrate excellence in practice as a model for students, to provide a base of study designed to improve patient care, to meet the needs of patients in its hospital's service area, and to offer highly specialized services in clinical areas of demonstrated expertise.

The MCV Campus' research programs are designed to develop new knowledge in areas ranging from the molecular level through clinical procedures to health-care delivery and outcomes. Their goal is to serve as a model for students in the spirit of inquiry and the application of the scientific process to patient care, and to focus interdisciplinary effort on problems amenable to the scientific approach.

Medical College of Virginia Hospitals Authority

In April 1996, Governor George Allen signed a bill that officially transferred the operations, employees, and obligations of the Medical College of Virginia Hospitals to the Medical College of Virginia Hospitals Authority. This transfer occurred on June 30, 1997.

The Authority assumes the obligations of MCVH as well as the mission of operating the MCV Hospitals as teaching hospitals for the benefit of the schools of the Health Sciences Division of Virginia Commonwealth University, and of providing high-quality patient care and a site for medical and biomedical research in close affiliation with the Health Sciences Division of VCU.

Academic Organization

VCU is organized into a college, schools, and departments offering undergraduate, professional and graduate programs. The dean's office of each school provides the general coordination of the academic departments and programs within the school. Listed are the schools with their respective departments and programs.

College of Humanities and Sciences

School of Mass Communications

- Advertising
- Electronic Media
- News-Editorial
- Public Relations

Program in African American Studies
 Department of Biology
 Department of Chemistry
 Department of Criminal Justice
 Department of English
 Programs in Environmental Studies
 Department of Foreign Languages
 French
 German
 Spanish
 Comparative Literature
 Department of History
 Program in International Studies
 Department of Mathematical Sciences
 Applied Mathematics and Mathematics
 Computer Science
 Operations Research and Statistics
 Department of Military Science
 Department of Philosophy and Religious Studies
 Program in Judaic Studies
 Department of Physics
 Department of Political Science and Public Administration
 Department of Psychology
 Interdisciplinary Degree Program in Science
 Department of Sociology and Anthropology
 Department of Urban Studies and Planning
 Environment
 Geography
 Information Systems
 Planning
 Public Policy and Social Change
 Public Management
 Preparation for Professional Studies in the Health Sciences
 Clinical Laboratory Sciences
 Clinical Radiation Sciences
 Dental Hygiene
 Dentistry
 Medicine
 Nursing
 Occupational Therapy
 Optometry
 Pharmacy
 Physical Therapy
 Veterinary Medicine
 Preparation for Professional Studies in Law
 Program in Women's Studies

School of Allied Health Professions

Department of Clinical Laboratory Sciences
 Department of Gerontology
 Department of Health Administration
 Department of Nurse Anesthesia
 Department of Occupational Therapy
 Program in Patient Counseling
 Department of Physical Therapy
 Department of Radiation Sciences
 Department of Rehabilitation Counseling

School of the Arts

Art Foundation Program
 Department of Art Education

Department of Art History
 Art Historical
 Architectural History
 Museum Studies
 Art Historical/Studio
 Department of Communication Arts and Design
 Communication Arts Program
 Digital Imaging
 Illustration
 Kinetic Imagery
 Photography
 Three-Dimensional Modeling
 Communication Design Program
 Art Direction
 Graphic Design
 Interactive Multimedia Design
 Typographic Design
 Three-Dimensional Design
 Department of Crafts
 Ceramics
 Fiber/Fabric Design
 Glassworking
 Jewelry/Metalsmithing
 Wood/Furniture Design
 Department of Dance and Choreography
 Department of Fashion Design and Merchandising
 Fashion Design
 Fashion Merchandising
 Department of Interior Design
 Department of Music
 Performance
 Composition
 Music Education
 Department of Painting and Printmaking
 Painting
 Printmaking
 Department of Photography and Film
 (no undergraduate degree)
 Department of Sculpture
 Department of Theatre
 Performance
 Design/Technical
 Theatre Education

School of Business

Advanced Program
 Business Foundation Program
 Department of Accounting
 Department of Economics
 Department of Finance, Insurance and Real Estate
 Finance
 Insurance/Risk Management
 Real Estate and Urban Land Development
 Department of Information Systems
 Department of Management
 Business Administration
 Entrepreneurship and Small Business
 General Management
 Human Resource Management/Industrial Relations
 Production/Operations Management
 Department of Marketing and Business Law

School of Dentistry

Division of Dental Hygiene
 Department of Endodontics
 Department of General Practice
 Department of Oral Pathology
 Department of Oral and Maxillofacial Surgery
 Department of Orthodontics
 Department of Pediatric Dentistry
 Department of Periodontics
 Department of Prosthodontics

School of Education

Division of Educational Studies
 Educational Foundations
 Division of Health, Physical Education and Recreation
 Physical Education
 Health Education
 Recreation, Parks and Tourism
 Division of Teacher Education
 in cooperation with the College of Humanities and
 Sciences Extended Teacher Preparation Programs
 Early Education NK-4
 Middle Education 4-8
 Secondary Education 8-12
 Biology
 Chemistry
 English
 French
 General Science
 German
 History/Social Science
 Mathematics
 Physics
 Spanish
 Special Education K-12
 Emotional Disturbance
 Mental Retardation

School of Engineering

Biomedical Engineering Program
 Mechanical Engineering Program
 Chemical Engineering Program
 Electrical Engineering Program

School of Medicine

Department of Anatomy
 Department of Anesthesiology
 Department of Biochemistry and Molecular Biophysics
 Department of Biostatistics
 Department of Dermatology
 Department of Emergency Medicine
 Department of Family Practice
 Department of Human Genetics
 Department of Internal Medicine
 Department of Legal Medicine
 Department of Microbiology and Immunology
 Department of Neurology
 Department of Obstetrics and Gynecology
 Department of Ophthalmology
 Department of Orthopedic Surgery

Department of Otolaryngology
 Department of Pathology
 Department of Pediatrics
 Department of Pharmacology and Toxicology
 Department of Physical Medicine and Rehabilitation
 Department of Physiology
 Department of Preventive Medicine and
 Community Health
 Department of Psychiatry
 Department of Radiation Oncology
 Department of Radiology
 Department of Surgery

School of Nursing

Department of Adult Health Nursing
 Department of Maternal-Child Nursing
 Department of Nursing Systems, Community and
 Psychiatric Mental Health

School of Pharmacy

Department of Medicinal Chemistry
 Department of Pharmacy and Pharmaceutics

School of Social Work

Baccalaureate Social Work Program
 Master of Social Work Program
 PhD in Social Policy and Social Work

Undergraduate and Professional Degree Programs

Bachelor of Arts Degrees

Art History
 English
 Fashion
 Foreign Languages/French
 Foreign Languages/German
 Foreign Languages/Spanish
 Foreign Languages/Comparative Literature
 History
 Music
 Philosophy
 Political Science
 Religious Studies

Bachelor of Fine Arts Degrees

Art Education
 Art History
 Communication Arts and Design
 Crafts
 Dance and Choreography
 Fashion
 Interior Design
 Painting and Printmaking
 Sculpture
 Theatre
 Theatre Education

Bachelor of General Studies

Bachelor of Music Degrees

Performance
Composition
Music Education

Bachelor of Science Degrees

Accounting
Biology
Business Administration
Chemistry
Clinical Laboratory Sciences
Clinical Radiation Sciences
Computer Science
Criminal Justice
Dental Hygiene
Economics
Engineering
 Biomedical
 Chemical
 Electrical
 Mechanical
Finance
 Finance
 Insurance/Risk Management
Health Education
Human Resource Management/Industrial Relations
Interdisciplinary Degree Program in Science
Information Systems
Management
 Entrepreneurship and Small Business
 General Management
Marketing
Mass Communications
Mathematical Sciences/Applied Mathematics
Mathematical Sciences/Computer Science
Mathematical Sciences/Mathematics
Mathematical Sciences/Operations Research
Mathematical Sciences/Statistics
Nursing
Occupational Therapy
Physical Education
Physics
Production/Operations Management
Psychology
Real Estate and Urban Land Development
Recreation, Parks, and Tourism
Science
Sociology and Anthropology
Urban Studies and Planning

Bachelor of Social Work Degree

Doctor of Dental Surgery

Doctor of Medicine

Doctor of Pharmacy

See Part VII for a list of certificate programs, minors and other special academic programs and services.

For a complete list of academic degree programs, see the academic program's section of this *Bulletin*.

Introduction to the University

Jean M. Yerian

Associate Dean of Student Affairs

VCU 101 Introduction to the University is a one-credit course that all entering undergraduate students are encouraged to take. This 10-week course is taught by faculty and Student Affairs administrators in small-class settings. Students assess their expectations and evaluate their academic strengths and career goals. Through lectures, guest speakers, and individual projects, students discover the VCU resources and services designed to help them solve problems and achieve a personally rewarding and successful academic program.

Having completed this course, students will better understand their fit as new members of the VCU community. This course is coordinated by the Associate Dean of Student Affairs, Virginia Commonwealth University, P.O. 843017, Richmond, VA 23284-3017, (804) 828-7525. For further information on new student programs, see Part IV of this *Bulletin*.

Course in Academic Affairs

VCU 101 Introduction to the University. Semester course; 1 lecture hour. 1 credit. A course to orient new students to the rich tradition and purposes of a university education. Students will assess their expectations and evaluate their academic strengths and career goals. Through lectures, guest speakers, and individual projects, students will discover the VCU resources and services designed to help them solve problems and to achieve a personally rewarding and successful academic program.

Undergraduate General Education Program

Virginia Commonwealth University's Undergraduate General Education Program represents those learning objectives deemed important for all undergraduate students regardless of their major area of study. The goal of the program is to ensure that students acquire the intellectual skills and breadth of knowledge that will not only contribute to the success of their undergraduate studies but will prepare them for the challenges and opportunities of the twenty-first century. The University has identified a series of broad educational commitments as well as seven specific curricular elements that constitute the Undergraduate General Education Program.

The following statements are commitments of the University:

1. Students can expect to learn the elements of clear thinking and to be nurtured in their development as careful, critical and creative thinkers.

2. Students can expect to learn how to access, retrieve, evaluate and synthesize information in various formats (bibliographic, graphic, numeric, spatial, textual, etc.) through up-to-date means relative to their studies at every level.

The Virginia Commonwealth University Mission states that the University is dedicated to educating students in an atmosphere of free inquiry and scholarship, so that they may realize their full potential as informed, productive citizens with a life-long commitment to learning and service. The best mechanism for fostering a commitment to life-long learning among students is to promote self-examination and to motivate them to seek the life of the mind by immersing them in exciting learning in a variety of venues among dedicated scholars in the arts, the humanities, the sciences and their myriad applications. A third commitment of the University is to foster life-long learning:

3. Students can expect guidance in developing the habit of self-examination and help in becoming self-actuated life-long learners.

Issues-oriented or thematic courses offer an integrated approach to certain fundamental human problems while requiring students to grapple with important issues of our day. To ensure that students have access to issues-oriented courses, the University makes the following commitment:

4. Students can expect to be able to achieve part of their general education through interdisciplinary courses addressing major issues of our day. The courses will integrate, rather than isolate, various disciplinary approaches to learning and understanding.

Virginia Commonwealth University has identified seven curricular elements for general education:

1. Communicating

Students should demonstrate effective oral and written communication skills. Beyond the general basic knowledge of composition and rhetoric, the student should learn the standards of communication within the student's own discipline.

2. Ethics

Students should demonstrate an understanding of the main concepts and theories of ethics and the role they play in our public and private lives at both the professional and personal levels. Students should be able to examine their fundamental moral beliefs, to form rational arguments and judgments relative to ethics, and to enable them to act on their values to make ethical choices.

3. Quantity and Form

Students should be able to quantify or represent information symbolically. Students should be able to use such codified information with respect to questions of size, proportion or order, and to ana-

lyze it or manipulate it in a manner consistent with the standards of the student's own discipline.

4. Science and Technology

Students should demonstrate some understanding of, and experience with, the processes and concepts of modern experimental science and the impact of science and technology on society.

5. Interdependence

Students should be able to demonstrate an awareness of the cultural, economic, informational, and social interdependencies that exist among nations and cultures today.

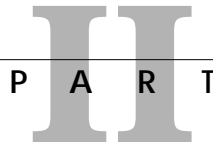
6. Visual and Performing Arts

Students should demonstrate an enhanced understanding of, and experience in, the various visual and performing arts which represent and express the complexities of the human condition.

7. Humanities and Social Sciences

Students should demonstrate an appreciation of the varieties and complexities of human cultures and values as expressed through literary, religious, historical, and philosophical works. They should also demonstrate an understanding of individual and collective behavior as structured through political, economic, social, and cultural institutions.

Beginning with the class entering in Fall 1997, students are subject to these general education requirements.



Admissions

General Policy Governing Admissions and Enrollment

As a comprehensive, urban, public institution, Virginia Commonwealth University seeks to provide excellent higher education for those who will profit from an intellectually challenging experience. The University encourages applications from people who are sincere in their desire to study in an environment where excellence in teaching, research, scholarly activities, and community services is stressed. VCU also encourages applications from returning adult students whose education may have been interrupted.

Recognizing the value of a diverse student body, the University invites applications from all qualified persons without regard to age, race, sex, religion, disability, or national origin. Although the University has a primary responsibility to educate Virginia residents, the value and contribution of a diverse student body is recognized and the enrollment of students from other states and countries is encouraged. Entrance requirements are in full compliance with all applicable federal and state statutes, rules, and regulations.

All people admitted to and enrolled in the University are classified as either degree-seeking or special (nondegree-seeking) students. Degree-seeking students are presumed to be working toward a degree in approved educational programs, while special students are permitted to enroll in classes on a semester/term basis. Recognizing a commitment to educate students who desire to take courses primarily for self improvement or to continue life-long education, the University also encourages the enrollment of special (nondegree-seeking) students. The University enrolls as many qualified degree-seeking and nondegree-seeking students as resources permit. When resources are limited, spaces go to those who present credentials showing the greatest potential for academic success in degree programs.

The Board of Visitors establishes general admission policies on the recommendation of the University administration. Admission criteria and policies are recommended by the Office of Admissions as well as the deans of the schools and college of the University on the advice of their faculties. Entrance requirements for schools and the college within the University may differ. Unique requirements, such as examinations, auditions, portfolios, interviews, licensure, or language proficiency, may be required to demonstrate potential for success in selected programs and courses. The University selects applicants who present the strongest qualifications in

scholastic achievement and potential, standardized examinations, and through the review of other evidence of potential. Each applicant is reviewed on an individual basis.

Graduate School Program Admissions

For information about requirements and procedures for admission to graduate study at VCU, see the *Graduate Bulletin* or contact the School of Graduate Studies at 901 West Franklin Street, Room B1, P.O. Box 843051, Richmond, VA 23284-3051, (804) 828-6916. The *Graduate Bulletin* is available for purchase at the VCU Bookstores, or may be accessed, in its entirety, via the Internet, at <http://www.vcu.edu/gradweb/>.

Categories of Student Enrollment

VCU provides a variety of ways in which a student may pursue a course of studies.

Degree-Seeking Student

This student has fulfilled the admission requirements of the University and a particular school and is enrolled in a bachelor's (four-year) degree program or a health sciences preparatory program. A degree-seeking student may engage in studies as either a full-time student (12 credits or more per semester) or as a part-time student and may enroll for day and/or evening classes.

Furthermore, a degree-seeking student may pursue a program of study in one of the following ways:

1. **As a declared departmental major** in a school or college. The student who declares a specific major when entering VCU begins a course of study leading to a degree in the declared major. (The student may change the major at a later date.)
2. **Undecided student** – Students who have not selected a specific major, may select the “undecided” category within the College of Humanities and Sciences. Students are advised along general academic lines so they may enroll in courses which will assist them in more clearly defining their academic objectives.

The advising program is flexible enough to suit the interest of any student, yet it is basic to a number of fields of study in different schools. During the first year of study, students are encouraged to investigate various fields until they

find a major that suits their interests, needs and goals.

Students must define these goals and declare a major area of study no later than the semester in which they complete 60 credits, generally after two years of study.

Nondegree-Seeking Special Student

A student who meets the requirements for undergraduate eligibility may enroll for credit as a special student in day and/or evening classes at VCU without seeking admission to a degree program.

Undergraduate special students are advised about course selections and aided in educational and vocational planning by the Office of Community Programs. Such students are ineligible for financial aid.

Permission to enroll as a special student does not ensure later admission as a degree-seeking student. Continuance in this status is dependent on academic performance, and special students are subject to the continuation regulations stated in Part VI of this *Bulletin*.

The undergraduate special student may pursue course work in one of the following categories:

1. **As a nondegree holder.** This student has not previously earned a baccalaureate degree. The student may take a maximum of 11 credits per semester (part-time).
2. **As a degree holder.** This student has previously earned a baccalaureate degree at VCU or another accredited institution and plans to pursue additional undergraduate course work. The student may take a maximum of 19 credits per semester.
3. **As a transient student.** This student is presently seeking a baccalaureate degree at another institution of higher education, is in good standing at that institution, and plans to pursue a course of study at VCU for no more than two semesters with the intent of transferring the work back to the home institution to complete the degree. The student may take a maximum of 19 credits per semester and must present a letter from the home institution approving the student's status as a transient student at VCU. (Refer to the "Special Student Guidelines" in this section of this *Bulletin*).

Credits earned as a special student are recorded on the student's permanent academic record. There is no limit placed on the number of credits that can be earned in this classification. Special students who wish eventually to earn a baccalaureate degree at VCU are encouraged to seek admission to a degree program before accumulating 22 semester credits.

Admission Guidelines

The credentials of undergraduate applicants for admission to degree status are reviewed on an individual basis. Because the number of applicants who meet the requirements for admission may exceed the number that can be admitted, the University selects those candidates who present the strongest qualifications in scholastic achievement and potential as reflected on

transcripts and test scores. Freshman applicants interested in the University's Academic Support Program should read the information on Office of Academic Support in this section of this *Bulletin*. Applicants interested in enrolling as special students should read the "Special Student Guidelines" that also appear in this section.

Freshman Undergraduate Admission Guidelines

An applicant for degree status must be a graduate of an accredited secondary school (or its equivalent) or hold a GED certificate with adequate scores, defined as a composite score of at least 55 on the GED battery. A high school student should submit an application for admission after completion of the junior year, unless applying for the Early Admission or Advanced Scholar programs, in which case the application should be submitted after the sophomore year.

All freshman applicants under the age of 22 are required to submit scores from the Scholastic Aptitude Test (SAT) or American College Test (ACT).

For admission to the College of Humanities and Sciences (including the School of Mass Communications), School of Business, School of Education, School of Engineering, or School of Social Work, at least 20 high school units are required, with the following minimum distribution of subjects: four units in English; three units in mathematics, one of which must be Algebra I and one of which must be geometry or Algebra II; two units in science, one of which must be a laboratory science; and three units of history or social sciences or government. Students are encouraged to present at least two units in a modern or ancient language. Many programs at the University require at least one year of collegiate study in a modern or ancient language for graduation.

In addition, preference is given to candidates who submit the Advanced Studies Diploma or its equivalent. This diploma requires four units in English; three in social sciences, including world history, United States history, and United States government; three units in mathematics (Algebra I, geometry, and Algebra II); three units in science drawn from earth science, biology, chemistry, physics, or other advanced science courses; and either three years of one foreign language or two years of two foreign languages.

Applicants seeking admission to programs in the College of Humanities and Sciences (including the pre-professional health-related programs), the Schools of Business, Education (especially those interested in the five-year bachelor's/master's program), Engineering, and Social Work are encouraged to take additional laboratory science courses in high school. In addition to the basic requirements in mathematics, applicants to programs in engineering, science, computer science, and mathematics are encouraged to take additional advanced courses in mathematics.

Freshman applicants planning to pursue a major in the health sciences (clinical radiation sciences, dental hygiene, clinical laboratory sciences, nursing, occupational therapy, pharmacy, and physical therapy) are

advised to apply to the preprofessional programs of their choice in the College of Humanities and Sciences.

The University Honors Program offers qualified students interested in health science the opportunity for early acceptance into many of VCU's Medical College of Virginia Campus programs.

Freshman applicants who are not admitted with degree status may be eligible to enroll at VCU as special students provided one year has elapsed since their high school graduation date or intended high school graduation date.

Early Decision Plan Guidelines

Highly qualified fall semester freshman applicants who have selected VCU as their first choice and who meet the November 1 early decision application deadline may be admitted to VCU by December 1. Early decision applications are not processed for the spring semester. The School of Nursing is the only health sciences program offering an early decision plan. Detailed information is available in Part XVII.

Special Student Guidelines

The first time a student registers as a special student, he or she must meet the following conditions of eligibility as appropriate to his/her status:

1. Be a high school graduate or GED holder for one year before the intended term of entry; or
2. Be an applicant who meets established admission requirements; or
3. Be a transfer student who is eligible to return to the former institution or has been out of school for at least one year for a first suspension or five years for the second suspension incurred at any institution; or
4. Be a former VCU student who is eligible to return. If the student has been suspended from VCU for academic reasons, eligibility for future enrollment must be reestablished in accordance with procedures outlined in the "Readmission Guidelines" section and the suspension policies outlined in Part VI of this *Bulletin*; or
5. Be a bachelor's degree holder taking undergraduate courses; or
6. Be an eligible transient student. A transient student must present, before or at the time of registration, a letter from the home institution which states that the student is in good standing, has permission to study at VCU for transfer back to the home institution, and which outlines the courses to be studied at VCU; or
7. Be a non-U.S. citizen who has been cleared through the Center for International Programs.

Students are responsible for knowing the terms of eligibility and for stating that they are eligible for special student status.

The first time a student registers as a special student, proof of eligibility is required. Students may sign an eligibility card stating their eligibility, which is then veri-

fied by the Office of Records and Registration. A student also may establish eligibility by providing verification of high school graduation, GED certification, or verification that he or she is eligible to return to the previous institution of study.

If the student's eligibility cannot be verified or if the student is found ineligible, the grade on the course taken is changed to no credit (NC). An administrative hold is placed on future registrations until eligibility is established.

Degree-holding special students enrolling in graduate courses should refer to the *Graduate Bulletin*.

Special students who plan to earn a degree eventually must apply for degree admission and, depending on their credentials, may be required to complete 15 credits with an earned GPA of 2.0 which includes a minimum of two courses (totaling six credits) required by their degree curriculum.

Students studying on foreign visas, because of U.S. immigration and naturalization regulations, are expected to enroll as full-time students and usually are not permitted to enroll as special students.

The Office of Admissions staff is available to answer general questions, to distribute publications and application forms, and to provide specific information pertaining to the admission process.

Application forms and other admissions information may be obtained by writing or telephoning the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526, toll free - 1-800-841-3638, (804) 828-1222, FAX (804) 828-1899, or by visiting the office at 821 West Franklin Street.

Evening Studies

VCU day and evening programs are academically integrated, and credit earned in the evening program is identical to credit earned during the day. Evening courses are designate by an "E" in the *Schedule of Classes* published each semester. A student may register for courses in the evening as a degree-seeking or a special (nondegree-seeking) student.

Admission Guidelines for Programs Requiring Specialized Supplementary Information

School of the Arts Freshman Admission Guidelines. The School of the Arts does not have specific high school unit requirements but does require applicants to have graduated from high school or hold a GED. In place of the units, degree applicants must complete the School of the Arts Admissions Packet which is designed to measure the applicant's ability and aptitude for the arts. **The packet must be filed in addition to the University Undergraduate Application for Admission**, forming an important part of the basis on which admission evaluation is made. With the exception of fashion merchandising and some concentrations in art history, applicants to the visual arts (including technical/design theatre) are required to complete the drawing and design exercises specified in the packet. Additional artwork should not be submitted unless requested.

Applicants to the Departments of Dance and Choreography, Music, or Theatre must complete the written information in the packet and are required to participate in an audition arranged by the appropriate department. Applicants to the Department of Music also must show evidence of proficiency in one or more areas of music performance and must take the musicianship placement examination.

Transfer Admission Guidelines

Transfer applicants are considered for admission provided they present evidence of good standing at the last institution attended. Although a minimum cumulative grade-point average (GPA) of 2.0 on a four-point scale in all nonremedial credits attempted at all accredited colleges attended is required for admission, preference is given to transfer applicants presenting a GPA of at least 2.25. Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits and who are under 22 years of age must submit the SAT or ACT results and also must meet specific guidelines listed in the Freshman Admission Guidelines section.

Some programs have additional requirements for admission as a transfer student. For example, transfer applicants to the Schools of the Arts, Business, Engineering and Mass Communications on the Academic Campus, and to the health science programs on the Medical College of Virginia Campus should consult the appropriate section of this *Bulletin* for admission requirements.

Transfer applicants who are not admitted with degree status may be eligible to enroll as special (nondegree-seeking) students as determined by the Office of Admissions.

Transfer applicants ineligible to return to a former institution because of an academic suspension may not enroll in VCU for a period of one year for the first suspension and five years for the second suspension.

Transfer applicants who have been suspended from another institution for nonacademic or disciplinary reasons are referred to the Office of the Vice Provost for Student Affairs for preadmission clearance.

Additional information for transfer students is available in the *VCU Transfer Guide* or on the Web at <http://www.vcu.edu/ugrad/bdocs/transfer.html>

State policy on transfer agreement between Virginia Community Colleges and Richard Bland College

Virginia Commonwealth University welcomes applications from Virginia Community College and Richard Bland students who have earned the Associate in Arts, Associate in Science or Associate in Arts and Science degrees. **Students holding these degrees will have junior standing and will be considered to have met all lower-division general education requirements** for Academic Campus programs with the exception of certain lower-level and upper-level program requirements which also apply to native students. Students should closely follow the detailed course sug-

gestions offered in the *Student Transfer Guide*. By selecting certain courses to fulfill requirements within the AA, AS or AA&S degree programs, additional lower division courses needed after transfer to VCU can be held to a minimum. A maximum of 68 semester credits (63 credits starting Fall 1997) can be accepted from the AA, AS or AA&S degrees.

Additionally:

- Students must make proper application for admission to VCU.
- Only credits applied toward the receipt of the Associate degree will be accepted, not to exceed 68 hours (only 63 credits starting Fall 1997).
- Credits needed to meet major prerequisites will be based on the *Course Equivalency Guide* or agreements resulting from program to program transfer agreements.
- Students will not be required to repeat courses that have been satisfactorily completed at a Virginia community college except in cases where special restrictions apply to all students.
- Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as native students.

For students with the Associate in Arts, Associate in Science or Associate in Arts and Sciences degrees from a VCCS institution or Richard Bland College, VCU degree requirements in effect at the date of the student's admission to the VCCS or Richard Bland College associate degree program will be used in certifying the student for graduation if the student has not interrupted his/her associate degree more than two consecutive semesters (excluding summer terms).

Requirements of native students which would apply to associate degree-holders are:

1. Freshman English: All BA and BS programs in the College of Humanities and Sciences, Schools of Social Work, Nursing, Allied Health Professions and the program in Dental Hygiene require completion of ENG 111-112 (VCU ENG 101-102 or VCU 101-200) with at least "C" grades in both courses or repeat the course(s) at VCU.
2. Programs in the College of Humanities and Sciences require competency through the elementary level of a foreign language for the BS programs; through the intermediate level for BA programs.
3. The School of Social Work requires a 2.5 GPA for admission to upper-level courses. The Schools of Business and Mass Communications require a 2.25 GPA for admission to upper-level course work. For students pursuing a career in early, middle, special or secondary education through the Extended Teacher Preparation Program of the College of Humanities and Sciences and the School of Education, a 2.5 GPA is required for entry into Teacher Preparation, a stage in the program after the student has complete 60 credits. For students applying to majors in the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performance applicants are required.

4. The professional baccalaureate programs in Social Work, Nursing, Allied Health Professions, the Dental Hygiene program in the School of Dentistry and the doctoral program in the School of Pharmacy have specific program-related lower-level requirements which must be completed to make proper application and to achieve success in the program, if admitted. They are not "general education" requirements in the traditional sense of the word. These courses are offered at almost all VCCS institutions and are widely publicized.

The health and physical education programs have specific lower-level requirements related to state-approved program status, professional certification and entry into the practicum sequence. Specified science courses are prerequisite for entry into upper-level kinesiology and exercise courses. While some flexibility is available in the transfer of some other courses into the lower-level part of the programs, the first two years of the health and physical education program are not traditional general education, as mentioned in the previous paragraph.

5. Transfer work from some occupation-technical programs is reviewed under specific conditions for the Bachelor of General Studies program and the special program in nursing for community college RN degree-holders who wish to complete the Bachelor of Science in Nursing.

Detailed information about the Transfer Module and Virginia Community College/VCU and Richard Bland College/VCU transfer equivalent courses is available on the Web at <http://www.vcu.edu/ugrad/bdocs/transfer.html>.

Readmission Guidelines

Readmission is subject to individual degree program requirements. Contact the program department or consult the appropriate program portion of this *Bulletin* for specific information.

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for that semester. Students who have not attended VCU for four or more successive semesters (including summer) may submit an application for readmission to the Office of Admissions. **Students who have attended another institution or who have been suspended since their last enrollment at VCU also must apply for readmission.** This must be done before the application submission date for the semester in which the student plans to return.

Students who wish to return to VCU after enrolling at another institution are considered transfer applicants and are reviewed for admission based on the transfer admission guidelines related to good standing and cumulative GPA. Students who attend another institution during periods of suspension from VCU are considered readmitted students for admission purposes and, on their return, assume their VCU GPA and academic status.

Readmission applicants who wish to change their majors may be required to meet additional requirements

for some programs. Applicants to the School of the Arts must submit the School of the Arts Admissions Packet.

Students may apply for readmission to VCU for the semester following completion of the first suspension period (two semesters, one of which may be summer). Under certain circumstances, students may be considered for readmission from the second and final suspension after a period of five years. Students on second suspension who wish to return before the required completion of the five-year suspension period must appeal their readmission to the Academic Regulations Appeals Committee. Students should contact the dean's office of the school or college from which they were suspended to initiate this process. For more information on suspension policies, refer to Part VI of this *Bulletin*.

Applicants who have been suspended from the University for nonacademic or disciplinary reasons are referred to the Office of the Vice Provost for Student Affairs for preadmission clearance.

International Student Admissions

VCU encourages qualified international students, both immigrant and nonimmigrant, to seek admission to the University. See Part XX for guidelines.

Admission Procedures

It is the responsibility of the applicant to ensure that all required admission documents are forwarded to the Office of Admissions before the deadline. (Refer to the "Undergraduate Application Deadlines" section in Part II of this *Bulletin*.)

Applications and supporting credentials for programs offered on the Academic Campus must be submitted to the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526, (804) 828-1222.

Applicants to the professional-level health science programs offered on the MCV Campus must have completed a minimum of 30 semester hours of transferable credit from an accredited college or university as specified by the program and must satisfy the prerequisites of the program to which they are applying. Refer to the appropriate section of this *Bulletin* for specific admission requirements. Applications and supporting credentials for the professional-level health science programs must be submitted to the Office of Undergraduate Admissions, MCV Campus, Virginia Commonwealth University, P.O. Box 980632, Richmond, VA 23298-0632, (804) 828-0488. (See Medicine and Dentistry for specific application instructions.)

All applications and supporting documents become the property of the University and are not returned to the applicant. After all required documents have been received, candidates are notified of the decision by the Office of Admissions.

The following must be submitted to the Office of Admissions when applying for an undergraduate degree program:

1. **Official Application Form.** Candidates seeking admission or readmission to the University in an

undergraduate degree program must file an official Application for Undergraduate Admission, signed by the applicant, before the specified deadline. Students planning to complete a second baccalaureate degree also must submit this application. Care should be taken to read the admissions guidelines in this Bulletin, to follow the directions accompanying the application, and to complete all information requested. Incomplete or incorrect applications will result in a processing delay.

2. **Application Fees.** Application fees are non-refundable and should be submitted by check or money order with the application for admission. Do not submit cash. The application fee is \$25. Currently enrolled VCU Academic Campus program students applying to undergraduate MCV Campus programs are not required to remit the application fee. Applications received without the application fee or an approved waiver request will be returned to the sender.
3. **Official Transcript(s).** Freshman applicants are required to submit their official high school transcript(s) showing course work completed to date. The secondary school record should contain courses and grades earned, rank in class, and overall GPA. A final transcript also is required showing date of graduation, overall GPA, and rank in graduating class. **Freshman applicants still in high school are encouraged to have their guidance counselors submit the Application for Admission with their transcripts.** GED holders must submit their partial high school transcripts (if high school was attended).

Transfer candidates must request the registrar of each college attended to send an official transcript of their course work. Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits also must submit their secondary school records.

Applicants to professional-level **health science programs** on the MCV Campus must submit official transcripts from all colleges, universities, and hospital schools/programs attended. School of Nursing and School of Pharmacy applicants also must submit official high school transcripts.

The Office of Admissions will obtain, for **readmission candidates**, the student's VCU transcript. Applicants who have attended other colleges since leaving VCU must request the registrar of each college to send official transcripts to the Office of Admissions.

4. **Test Scores.** Freshman applicants (high school graduates and GED holders) under 22 years of age must submit SAT I or ACT scores and, if applicable, an official copy of their GED scores.

Transfer applicants under 22 years of age and with fewer than 30 semester/45 quarter credits of college work must submit SAT I or ACT scores.

Applicants to professional-level **health science programs** on the MCV Campus must submit these scores if they have taken either of these tests. Applicants are not required to take either test if they have not already done so. However, all

School of Nursing applicants must submit SAT, ACT or GRE scores regardless of age.

Foreign applicants whose native language is other than English must submit scores for the Test of English as a Foreign Language in addition to any other test scores required. In general, VCU requires a minimum score of 550 on the TOEFL, but some programs may require a higher TOEFL score. Some MCV Campus programs also may require TWE (Test of Written English) or TSE (Test of Spoken English) scores.

5. **Supplemental Application Packets.** Art applicants must submit the School of the Arts Admissions Packet to the School of the Arts, Virginia Commonwealth University, P.O. Box 842519, Richmond, VA 23284-2519.

Applicants to professional-level **health science programs** on the MCV Campus must submit, in addition to the application for admission, the supplemental application materials for the program to which they are applying. All materials are provided in the MCV Campus Application Packet for the program to which the applicant is applying. Refer to the appropriate section of this *Bulletin* for specific admission requirements.

Foreign applicants submit the Financial Support Statement with the application for admission in addition to any other supplemental application packets which may be required.

6. **Interviews and Auditions.** Applicants to the following programs will be contacted by the program for an interview or audition: clinical laboratory sciences, dance/choreography, dental hygiene, music, nontraditional studies, occupational therapy, pharmacy, radiation sciences, and theatre. Although interviews are not required for other programs, applicants are welcome to meet with an admissions counselor to discuss their applications. In some cases, however, the Office of Admissions may require an interview of any applicant.
7. **Immunization Requirements.** Virginia law requires all **full-time** students to submit an official certification of immunization to **University Student Health Services** prior to registration. Detailed information on immunization requirements can be found in Part IV of this *Bulletin*.

Note that some MCV Campus programs may require additional immunizations because of high patient contact.

Admission to the University Honors Program

Eligibility Requirements

The University Honors Program is open to qualified entering freshmen, continuing students who demonstrate excellence after enrolling at VCU, and transfer students who have shown similar ability at other institutions.

1. High school graduates with combined SAT scores of at least 1270 (recentered) who rank in the upper

15% of their graduating class or who are the recipients of a VCU Presidential Scholarship are eligible for admission to the University Honors Program automatically upon application. Continuing VCU students or transfer students who have achieved a 3.50 cumulative GPA in 30 college semester hours are also eligible for admission automatically upon application.

2. Academically talented students who do not quite meet the criteria for automatic admission, are encouraged to apply. Students are admitted to the University Honors Program on an individual basis by a subcommittee of the Honors Council. The primary condition for acceptance is evidence of sufficient personal commitment and academic ability to do honors level work.

To continue in the University Honors Program, a student must maintain a cumulative GPA of 3.50 or higher. Should a student's cumulative GPA fall below 3.50, the student may be placed on Honors Probation for a semester. Withdrawal from the Honors Program is not noted on the student's permanent record.

Undergraduates from all schools and the college who meet the eligibility requirements are invited to apply. For application materials write to Dr. John F. Berglund, Director, University Honors Program, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803.

Guaranteed Admission Programs

This series of programs guarantees some Honors students admission to the professional-level health sciences program of their choice or to a graduate program in medicine (see the *Graduate Bulletin* for specific program information), biomedical engineering, business, criminal justice, education, history, mathematical sciences, physics, psychology, public administration, or urban studies. Honors students who receive guaranteed admission may enter the program of their choice without test scores required, except for statistical purposes, or further application materials provided they fulfill University Honors Program requirements and satisfy the curricular prerequisites of the program they plan to enter. To maintain guaranteed admission status, Honors students must maintain the 3.50 GPA, progress satisfactorily in Honors courses and special courses designated by the professional or graduate program they plan to enter.

Professional Health Sciences Guaranteed Admission Programs. Entering Honors freshmen with a combined SAT scores of at least 1270 (from one test date), with neither score below 530, may apply for guaranteed admission to the MCV Campus professional programs in medicine, clinical laboratory sciences, dentistry, dental hygiene, nursing, occupational therapy, pharmacy, physical therapy or clinical radiation sciences. Transfer students accepted into the Honors Program who plan to enter program in the School of Dentistry also may apply for guaranteed admission if they meet the SAT requirement.

Graduate Studies Guaranteed Admission Programs. Honors students interested in academic or research careers in anatomy, biochemistry and molecular biophysics, biostatistics, human genetics, microbiology and immunology, pharmacology and toxicology, and physiology are invited to apply for guaranteed admission to the School of Medicine during their sophomore year of college. Programs in this school lead to Master of Science (MS) and Doctor of Philosophy (PhD) degrees.

Honors students, if they meet the criteria established by the School of Business, may be guaranteed admission to programs for any of the master's degree programs offered by the School of Business. The master's degrees are valid terminal degrees for careers in management and administration or may be used to satisfy a substantial portion of the requirements for the doctoral program offered at VCU.

Students accepted into the University Honors Program who are planning careers as elementary, secondary, or special education teachers may receive guaranteed admission to the graduate phase of the University's extended teacher preparation program. In this program, students earn a bachelor's degree in the College of Humanities and Sciences, a master's degree in the School of Education, and satisfy the certification requirements of Virginia and more than 30 other states. The Honors Program in Teacher Preparation strives to develop teachers with outstanding scholarship and sound professional competency.

The College of Humanities and Sciences seeks to attract graduate students of the highest caliber and to prepare them, through research and instruction, to meet local and national needs for highly-trained men and women. Students accepted to the University Honors Program may apply for guaranteed admission to master's degree programs in criminal justice, history, mathematical sciences, physics, psychology, public administration, or urban studies. Other programs offering early acceptance into the graduate school through the Honors Program include gerontology, clinical laboratory sciences, occupational therapy, physical therapy, rehabilitation counseling, and biomedical engineering.

Guaranteed Admission Application Procedures

To be accepted into a Guaranteed Admission Program, a student must be accepted by the University, by the University Honors Program, and by the Admissions Committee of the program the student wishes to enter. The Admissions Committee may require an interview. The application deadline for the Guaranteed Admissions Program into the School of Medicine (MD degree) is December 15 of the year before matriculation at VCU. The deadline for all other programs is April 1.

For additional information about the Professional Health Sciences Guaranteed Admission Programs of the VCU Honors Program, write or call Dr. Anne L. Chandler, Associate Director, University Honors Program, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803.

For additional information about any of the Guaranteed Admission Programs of the VCU Honors Program, write or call Dr. John F. Berglund, Director, University Honors Program, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803.

Undergraduate Application Deadlines

Freshman Application Deadlines

Regular Decision Plan. All applicants to programs on the Academic Campus must submit their applications for the fall semester by February 1 and for the spring semester by December 1. Applications for admission received after these dates will be considered on a space-available basis. Applicants seeking admission to the Guaranteed Admissions program to VCU's School of Medicine must submit the Guaranteed Admissions Application by December 15.

Early Decision Plan. Secondary school students with outstanding records applying to undergraduate programs may want to consider VCU's Early Decision Plan. Under this single-choice, binding plan, applicants agree to attend the University if offered admission; and they must withdraw all applications from other institutions if accepted to VCU. The deadline for early decision application is November 1. Acceptances are mailed on December 1. If the University does not offer admission on December 1, the applicant will be reconsidered automatically under the regular admissions process.

Transfer Application Deadlines

While application deadlines for most programs are June 1 for the fall semester and December 1 for the spring semester, the following application deadlines are established for the programs indicated:

	Fall Semester
dental hygiene	February 15
nursing	December 15
occupational therapy	December 1
clinical radiation sciences	February 1
clinical laboratory sciences	May 15
pharmacy	January 15

Applications for admission to the programs listed above (except for the programs in occupational therapy and dental hygiene) received after these deadline dates will be considered on a space-available basis.

Admission Notification

Freshman applicants accepted to the University for the fall semester are notified by letter of the conditions of their acceptance by April 1 if they meet the February 1 recommended deadline. Freshman applicants who apply under the regular admission process may receive **early notification** of their acceptance if they present exceptional admission credentials. Transfer applicants for the fall semester to programs on the Academic Campus who apply before the June 1 deadline are noti-

fied by July 1. **All applicants for the spring semester are notified on a rolling basis.**

Information on advisement and registration procedures, the immunization form, and housing information is included with the acceptance letter. Virginia requires that all full-time students enrolling for the first time in any state institution of higher education furnish an immunization record from a qualified licensed physician. New VCU students must submit their immunization form to University Student Health Services.

When an applicant is tentatively accepted to the University, a final transcript is required to complete the individual's admission file. If the official transcript is not received by the end of the fourth week of classes of the semester for which the student was accepted, an administrative hold will be placed on future registrations until the credentials are received establishing the student's eligibility.

The University reserves the right to rescind offers of admission if the final documents indicate that the applicant no longer satisfies the entrance requirements upon which acceptance was granted.

Responding to the Offer of Admission

Upon responding to the offer of admission, all immunization records should be sent to University Student Health Services.

Fall freshman applicants accepted under VCU's Early Decision Plan must accept the offer of admission by January 1. Fall freshman applicants accepted to the University by April 1 must notify the Office of Admissions of their intent to enroll or not to enroll by May 1. Fall freshman applicants, if accepted after April 1, must notify the University within four weeks.

Fall transfer applicants accepted to programs on the Academic Campus must notify the Office of Admissions of their intent to enroll by July 1 or four weeks after receiving their letter of admission. Fall applicants to the health sciences programs must respond within the time frame listed on their acceptance letters as determined by the individual department. **All students accepted for the spring semester must respond to the offer of admission by January 1.**

A \$100 nonrefundable deposit is required of all applicants who accept VCU's offer of admission. However, the Schools of Dentistry, Medicine and Pharmacy require a higher deposit. (see specific programs for amounts). The \$100 deposit is credited to the student's account with the University and is not deferrable to a future semester. Students experiencing economic hardships may request a waiver of the \$100 deposit through a letter from a school official (counselor, adviser, financial aid counselor, principal) submitted to the Office of Admissions. The decision to grant a waiver is based on information submitted to the University on the student's Free Application for Federal Student Aid.

Students who defer their acceptance to a later semester forfeit their initial tuition deposit and must submit a second \$100 deposit for the semester in which they choose to enroll.

Post-Admission Advising

Students are encouraged to seek advising, depending on intended major, from the appropriate office listed:

School of the Arts

Art Foundation

Office of the Director, 812 West Franklin Street,
Room 208, (804) 828-1129

Other Advising

Contact major department

School of Business

Office of the Associate Dean for Undergraduate Studies
Business Building, 1015 Floyd Avenue,
Room 3119, (804) 828-3710

Department of Clinical Laboratory Sciences

Randolph Minor Annex-Basement
301 College Street, (804) 828-9469

School of Dentistry

Lyons Building, P.O. Box 980566
Suite 309, 520 N. 12 Street, (804) 828-9196

Division of Community and International Programs

Bachelor of General Studies Program
Office of Community Programs
827 West Franklin Street,
Room 202, (804) 828-8420

Division of Dental Hygiene

Wood Memorial Building, P.O. Box 980566
Suite 318, 521 N. 11th Street, (804) 828-9096

School of Education

Office of the Assistant Dean
Oliver Hall, 1015 West Main Street, Room 2090
(804) 828-3382 or see Humanities and Sciences

School of Engineering

921 West Franklin Street,
Room 102, (804) 828-3643

College of Humanities and Sciences

(including humanities, sciences, social sciences, mass communications, pre-health sciences)

Office of the Associate Dean
Hibbs Building, 900 Park Avenue, Room 205,
(804) 828-1673

Humanities and Sciences/Undeclared

Office of Academic Advising, 900 Park Avenue,
Room 207, (804) 828-2333

Health and Physical Education

Department of Health and Physical Education
817 West Franklin Street, Room 221,
(804) 828-1948

Honors Program

920 West Franklin Street
(804) 828-1803

School of Medicine

(Doctor of Medicine Program)
Student Activities, Sanger Hall,
1101 East Marshall Street,
Room 1-002, (804) 828-9791

School of Nursing

Nursing Education Building
1220 E. Broad Street, P.O. Box 980567
(804) 828-0724

Department of Occupational Therapy

VMI Building
1000 E. Marshall Street, 4th Floor, Room 422
(804) 828-2219

School of Pharmacy

Doctor of Pharmacy Program
Office of the Associate Dean for Admissions
P.O. Box 980581
Smith Building, 401 North 12th Street
Room 155, (804) 828-3000

Department of Radiation Sciences

West Hospital
1200 E. Broad Street, 6th Floor West Wing
(804) 828-9104

School of Social Work

Office of the Director for the BSW Program
1001 West Franklin Street, Room 103,
(804) 828-0703

Undergraduate applicants not admitted to degree status but offered special status may request information or assistance in formulating alternative educational plans from the Office of Community Programs, 827 West Franklin Street, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-1831.

Orientation

The University provides orientation during the summer, fall, and spring to all new undergraduate students. Orientation programs are designed to increase the students' awareness of the University's programs, services,

and facilities and to provide opportunities for faculty advising and registration for their first semester of classes.

After acceptance to the University, students are sent detailed information regarding the orientation program. Included in the summer orientation program is a program for the parents of freshman students that is especially helpful to their understanding of the University and its future relationship to their sons and daughters.

For additional information about orientation, contact the Office of New Student Programs, Virginia Commonwealth University, P.O. Box 842032, Richmond, VA 23284-2032, (804)828-3700. For information regarding orientation to MCV Campus programs, contact your individual department.

Evaluation of Transfer Credit – Four-Year and Two-Year Institution Applicants

An evaluation of transferable credits for applicants to the Academic Campus programs is made by the appropriate school or department after the accepted applicant's final transcript has been received by the Office of Admissions. Applicants to health science programs on the MCV Campus will receive a copy of the transfer credit evaluation with the offer of admission.

Acceptable course credits from other institutions will be recorded on the student's permanent record at VCU, together with the grades earned, if the credits are applicable toward a degree program. Accepted transfer credits are counted as hours earned toward the degree but are not used in the computation of the student's VCU GPA. Grades for transfer credits are evaluated in the computation determining graduation honors. Credits earned at other institutions carrying a grade of "D" are not accepted for transfer (see exception relating to Articulation Agreement with state two-year institutions). In addition, transfer work from two-year institutions may not be applied to upper-division requirements at VCU.

Courses taken on the "pass/fail" or "pass/no pass" systems or courses taken for grades of "satisfactory" or "unsatisfactory" that receive earned credits and a "satisfactory" grade (or comparable passing grade) from the transfer institution receive equivalent semester credit. Transfer credits graded as "pass/fail" will not be included in the computation for determination of academic honors at VCU.

Degree candidates must complete the last 25% of the credit semester hours required for their bachelor's degree program at this institution.

Articulation agreement between Virginia Commonwealth University and Virginia Community Colleges (Academic Campus Only)

Students from VCCS institutions, Richard Bland College or other two-year institutions **who have not completed the college parallel AA, AS or AA&S degree** will have the exact designation of their status

determined after an evaluation of acceptable credits as determined by the equivalencies shown in the *VCU Transfer Guide* that may be accepted, including not more than 50 percent in the major field of study. However, the applicant should realize that more than two additional years may be necessary to complete the degree requirements in certain curricula.

Credits earned in community college occupational or technical programs will be judged on their own merits to determine their applicability toward VCU degree requirements. In addition, many accredited institutions offer correspondence courses which may be considered for transfer credit.

After an accepted student's final grades have been received by VCU Admissions, a transfer credit evaluation form is prepared by the student's intended VCU college or school listing the transferable courses and is sent to the student. Students accepted to programs on the MCV Campus will receive the transfer credit evaluation form with the letter of acceptance.

Accepted transfer credit contributes to hours earned and toward fulfillment of degree requirements at VCU. Although the grades of accepted transfer courses are recorded on the student's VCU transcript, hours attempted and quality points earned are not recorded. Accepted transfer credits are not included in the transfer student's overall grade-point average at VCU. **However, calculation of the GPA requirement for admittance into the School of Business advanced program considers grades earned at all institutions attended.** The GPA for fulfillment of VCU degree requirements is computed only from courses taken at VCU. The grades and quality points of transfer courses are evaluated in the computation determining graduation honors. Accepted quarter-hour credits recorded on the VCU transcript are converted to semester-hour credits.

Credits transferred from community colleges may not be used to fulfill the VCU degree requirement of 45 semester-hour upper-level credits even though they may be substituted for the content of a VCU 300-level course.

A student who changes his/her major after beginning classes at VCU must have another evaluation of credits completed by the school offering the new major. In this case, the department chairperson of the new major is not obligated to accept all the courses accepted for transfer credit in the initial evaluation. This does not change the completion of general education requirements per the *State Policy on Transfer* if the student has completed the associate degree. Conversely, a second evaluation following a change of major may result in transfer of a greater number of credits.

Attainment of the college/school or department minimum grade-point average and any other standard requirements is required of all students, including, in the case of the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performing arts applicants. Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as currently enrolled VCU students.

Other Sources of Academic Credit

Advanced Placement Tests/College Board

Qualified students who have taken college-level work in a secondary school may receive academic credit and/or advanced placement. Examinations which determine advanced placement are the Advanced Placement Tests of the College Board. AP grades of 3, 4, or 5 will be given from three to ten semester credits per AP test depending on the subject area and the quality of the free response section of the particular AP test. Final determination of credits are made after test results and examination booklets have been received by the deans office in the College of Humanities and Sciences and have been evaluated by the University. Accepted credits are counted as credits earned toward the degree but are not used in the computation of the students VCU GPA.

The University accepts advanced placement in the following areas: American history, history of art, biology, chemistry, computer science, English language and composition, economics, European history, French language and literature, German language and literature, government and politics, Latin, mathematics calculus AB, mathematics calculus BC, music listening and literature, music theory, physics B, physics C, psychology, and Spanish language and literature.

College Level Examination Program (CLEP)

CLEP is designed to allow people who have gained knowledge outside the classroom to take examinations and receive college credit for what they have learned.

Procedures for VCU students

1. Obtain CLEP approval forms, information about CLEP general and/or subject examinations, VCU course equivalency information, optional essay requirements, and CLEP examination applications from the Office of Community Programs, Virginia Commonwealth University, 827 West Franklin Street, Room 202, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420.
2. CLEP approval forms must be completed for general examinations and for each subject examination taken.
3. Discuss the examination(s) to be taken with an adviser. Obtain permission signatures from the adviser and dean of the school in which you are a major on each of the three approval forms. If the optional essay is required for a subject examination, it should be indicated on the CLEP approval forms and on the CLEP application.
4. Return the completed CLEP approval forms, the completed CLEP application, and the proper fee to the Office of Community Programs. After receipt of these materials and fees, the examination time will be scheduled.
5. The examination score and the result of the optional essay are sent to the dean's office in which the student is a major for final action. The dean then sends formal notification to the student, Records and Registration, and the student's adviser.

Regulations for VCU students

1. CLEP credit is officially awarded only to students who are fully accepted into a VCU degree program.
2. Students may not take a subject or general examination during the semester in which they plan to graduate.
3. A student may not attempt a subject or general examination if it duplicates in part, or full, any VCU course or combination of courses which the student has already completed or enrolled in for credit. For example, a student who has completed courses in United States and European history, sociology, anthropology, and psychology, or similar courses, is not eligible to take the social sciences and history general examination. The dean's office of the school in which the student is a major makes the decision about the appropriateness of taking a particular examination.
4. If a student has earned CLEP subject examination credit, the student may not take a VCU course for credit which would duplicate the CLEP credits already earned.
5. The CLEP general examination in English composition is not acceptable for VCU credit. Students may take the CLEP Freshman College Composition subject examination for credit equivalent to English 101. There is no CLEP exam equivalent for English 200. In order to receive credit for the CLEP general examination in mathematics, the student must take the Mathematics Placement Test and test at the STA 208, 210 or MAT 200 level. To make arrangements to take this placement test, contact the Department of Mathematics at (804) 828-1301, ext. 107. Results should be reported to the dean of the school in which the student is a major.
6. A maximum of 54 semester credits can be earned through CLEP examinations.

Undergraduate Credit by Examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the University provides its students the opportunity to accelerate their education through credit by examination. The conditions under which credit by examination may be given and the procedure for doing so are outlined below.

1. With the approval of the dean, each department or program shall:
 - a. determine which, if any, courses shall be available for credit by examination. The student should check with the department offering course work in the area in which he or she wishes to take credit by examination for a list of the courses so designated;
 - b. determine the types of examinations, standards of evaluation, and evaluators for the courses so designated; and
 - c. determine the qualifications for students to be eligible to take the examinations.
2. The examinations, if available, may be taken by any enrolled student during the fall and spring semesters and during the summer session.

3. The student wishing to take credit by examination must meet the following requirements:
 - a. not have received a grade listed in this *Bulletin*, including AU or W for the course for which credit by examination is sought. Also, the student should not have been granted transfer credit for a similar course taken elsewhere.
 - b. be a currently enrolled student as certified by the examining department.
 - c. meet departmental and school eligibility requirements as evidenced by the written approval of the chair of the examining department.
4. After consultation with the major adviser and within the first four weeks of a semester or the first week of a summer session, the student must complete the Credit by Examination Approval Form with the department chair. The form, available from the department, should be left with the chair when it is completed.
5. Within two weeks, the student is notified by the dean's office of the time and place of examination.
6. After notification, but before taking the exam, the student must pay the University cashier the fee established by VCU for each credit being sought. As verification of payment, the student presents the receipt to the department chair before the examination is taken.
7. After the examination is taken, the results and the examination are sent to the dean's office, which notifies the student of the results. If the student passes the examination, the course title, credits earned, and the grade (CR) are recorded on the student's permanent academic record. Credits so earned are applied toward the graduation requirement for total credits. However, these credits are not included in the computation of the student's GPA.

Military Service and ROTC Courses

The University may grant credit for formal military service school courses offered by the various branches of the United States Armed Services. The guidelines for granting such credit include:

1. the positive recommendation of the Commission on Accreditation of Service Experiences of the American Council on Education as stated in the most recent edition of *A Guide to the Evaluation of Educational Experiences in the Armed Services*; and
2. the applicability of such credit toward the student's degree program as interpreted by the department or school in which the student seeks a degree. Credits accepted are counted as credits earned toward the degree, but are not used in the computation of the student's GPA. The student should consult with the dean of the school or college for further details about the procedures for awarding credit for military service school courses.

Army ROTC is open to any VCU student. Advanced standing may be granted to veterans, junior ROTC graduates, or members of the Reserves/National Guard after the department chair's review of academic records and verification of ROTC academic alignment. The number of credits accepted toward graduation requirements is determined by each school. See the Department of Military Science in Part VIII of this *Bulletin*.

Credits Earned through the International Student Exchange Program (ISEP)

Credits earned by a VCU student through ISEP appear on the student's transcript, but are not included in the computation of the student's cumulative GPA. See Center for International Programs in Part XX of this *Bulletin*. This policy became effective July 1990.

Credits Earned through the National Student Exchange (NSE)

Credits and grades attempted by a VCU student through NSE appear on the student's transcript, and are included in the computation of the student's cumulative GPA. This policy became effective March 1995. For additional information, see the Center for International Programs in Part XX of this *Bulletin*.

Senior Citizens Higher Education Programs

The Senior Citizens Higher Education Act of 1974 provides that any legal resident of the state who before the beginning of any term or semester . . . in which he or she claims benefits of the act, and who has had legal domicile in the state for one year may, without paying tuition, register for and enroll in courses under the conditions outlined in the act as amended in 1982 and 1986.

The tuition-free policy shall apply except that the senior citizen shall be subject to fees established for the purpose of paying for course materials, such as laboratory fees, individualized music instructions, etc.

Senior citizens not enrolled for academic credit may not register for more than three courses in any one term or semester but may register each semester. The Senior Citizens Act benefits shall be available to persons 60 years of age or older with the following legally mandated provisions:

1. The senior citizen shall be subject to admission requirements of the institution.
2. The institution shall determine whether or not it has the ability to offer the course or courses.
3. If the senior citizen has a federal taxable income of not more than \$10,000 during the preceding year, the individual may take a course for academic credit at no charge. If the person's taxable income exceeded \$10,000, the individual may only audit the course at no charge. A senior citizen, regardless of income level, may take a noncredit course at no charge.

4. The senior citizen shall be admitted to a course after all tuition-paying students have been accommodated. Senior citizens wishing to avail themselves of the opportunity to study at VCU should call (804) 828-1222 or the Office of Community Programs, (804) 828-1831.

4. The desired courses to be studied must be available and appropriate.
5. All parties should emphasize that tuition is charged for courses taken as an Advanced Scholar.

Notification forms and other information may be obtained from the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526, (804) 828-1222.

Enrichment and Acceleration Opportunities

Special honors programs and courses are offered at the University. Refer to the appropriate school sections of this *Bulletin* for further information. Interdisciplinary honors courses designed for superior freshmen in any program also are available.

Early Admission Program

The Early Admission Program permits exceptional students the opportunity to enroll in undergraduate programs at the University as freshmen after the completion of the junior year of high school. The program is available to students who demonstrate readiness for college by their high school record, SAT results, and in an interview with an admissions counselor. Applicants for the Early Admission Program must present a minimum GPA of 3.2 and minimum combined SAT scores of 1180 or demonstrate exceptional talent in their intended area of study. Additionally, early admission applicants must be within two of the required units for graduation and have the written approval of the high school principal (or designee) to seek admission to college as full-time undergraduate students. Candidates interested in this program should write the Office of Undergraduate Admissions for further information.

Advanced Scholars Program

Qualified high school students from Richmond and surrounding area high schools may be permitted to carry college-level courses at the University while concurrently completing the high school diploma. Students may select courses of interest and upon successful completion of the courses may receive college credit. However, courses selected should not be available in the high school curriculum.

Candidates must be nominated and approved by the secondary school principal. A maximum of 100 candidates are accepted each term, and candidates may enroll in no more than two courses per term.

As a guide to secondary schools, the following criteria for selection are considered:

1. Each candidate must be nominated and approved by the secondary school principal.
2. Each candidate must have achieved a total of 1180 points on the College Entrance Examination Board SAT or SAT I and must have maintained a "B" average.
3. Each candidate must be a high school junior or senior.

PART

Expenses and Financial Aid

Fees and Expenses

Students must pay all applicable fees when due, as described in this section. Students who fail to pay these fees on time will be charged a late payment fee. The University reserves the right to revise or alter all fees, regulations pertaining to student fees, and fee collection procedures at any time. In addition to expenses billed by the University, students should make allowances for books, clothing, supplies, travel and other out-of-pocket costs when figuring their total yearly expenses at the University.

Every student is responsible for keeping a current mailing address on file with the Office of Records and Registration.

Fee Schedule

Fees categorized and described in this section also appear in the *VCU Schedule of Tuition, Fees, and Other Expenses* – a publication available each June after the Board of Visitors has set fee amounts. This publication is available at the Admissions reception desk at 821 West Franklin Street and in the Student Services Centers on both campuses. Students also can obtain a copy by writing or phoning the Office of Admissions or the Student Accounting Department.

Tuition Determination and Student Classification

Tuition is based on the number of credit hours a student is taking and by the student's place of residence. For in-state tuition benefits, the student must comply with Section 23-7.4 of the *Code of Virginia*. See "Appendix C" of this *Bulletin*.

All applicants to VCU who want in-state tuition rates as Virginia residents must fill out the Application for Virginia In-State Tuition Rates. The residency determination of the applicant is conveyed at the time of admission.

New students initially classified as non-Virginians for tuition purposes may request a review of the initial residency determination by contacting the Residency Officer in the Office of Records and Registration. This office may request that the applicant complete a *Student Supplemental Application for Virginia In-State Tuition Rates* and submit documents for additional clarification. Continuing students desiring a change of residency status must submit a completed *Student Supplemental Application for In-State Tuition Rates* with supporting

documentation. Requests and applications for a second review should be submitted to the Residency Officer no later than 30 days prior to the beginning of any term.

Students approved for a change to in-state status for tuition purposes are notified by mail with copies of their approval letters sent to the Financial Aid Office and the Student Accounting Department. Students denied this status also are notified by mail. The denial letter informs the student of procedures for appeal of this decision.

Academic Common Market

The state participates in the Academic Common Market, an interstate agreement for sharing uncommon academic programs at both the baccalaureate and graduate levels. Other states which participate in the Academic Common Market are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, South Carolina, Tennessee, Texas, and West Virginia. Schools in these states are able to make arrangements for residents who qualify for admission to specific programs in other states to enroll on an in-state tuition basis. A student who has been accepted for admission into a program for which the student's state of residency has obtained Academic Common Market access must obtain certification of residency from the higher education authority of the student's state of residency. Inquiries about the Academic Common Market also should be directed to the higher education authority of the student's state of residency. Certifications of residency from the higher education authority of the student's state of residency should be submitted to the School of Graduate Studies for both undergraduate and graduate students.

Tuition and Fee Charges

Students accepted into an undergraduate degree program who accept the offer of admission must pay a \$100 nonrefundable tuition deposit (amount of deposit may vary according to program). This deposit is credited toward the tuition charge for the first semester. If the student accepts the offer, pays the fee, then decides not to enroll for the intended semester, the deposit is forfeited.

Students are classified as full-time or part-time based on the total number of credit hours enrolled in each semester. For tuition charges, there is no distinction between day and evening students. A student must be enrolled in at least 12 credits each semester to achieve full-time undergraduate status. An undergraduate year includes two semesters.

Full-time undergraduate students are charged a flat tuition fee per semester. An undergraduate student enrolled for more than 18 credits any semester will be charged a course overload fee on a per credit hour basis above the full-time tuition rate. The overload fee will not apply to students in first professional programs or other programs that specifically require the student to enroll in courses that will exceed the applicable maximum number of credit hours. Part-time undergraduate students, those enrolled in less than 12 credits, are charged tuition on a per-credit basis. Students classified as Virginia residents pay lower tuition and fees than out-of-state students.

In addition to tuition, students must pay the mandatory fees described in this section.

University Fee

This fee is used by the University to support student facilities, campus development, intercollegiate athletics, and other programs. Full-time students pay a flat-rate university fee each semester. Part-time students pay this fee on a per-credit basis.

Student Activity Fee

This fee is used to support social, cultural, and other student activities on the Academic Campus. These activities include concerts, plays, student organizations, and publications.

This fee is determined and assessed by the student governing body on the Academic Campus. Full-time students on the Academic Campus pay a flat-rate student activity fee, while part-time students on the same campus pay this fee on a per-credit basis. Students on the MCV Campus are not charged this fee.

Student Government Association Fee

This fee is used to support social, cultural, and other student activities on the MCV Campus. It is determined and assessed by the Student Government Association on the MCV Campus. Academic Campus students are not charged this fee.

Student Health Fee

All full-time students on both campuses must pay the student health fee. Part-time students may participate in the University Student Health Services on an elective basis by paying the student health fee. The University Student Health Services offers unlimited office visits for acute and chronic ailments, after-hours emergency room referrals, and laboratory tests, among other services.

The University fee, the student activity fee, the student government association fee and the student health fee are not charged to students taking off-campus classes.

Special Fee Charges

Because of specialized programs, various schools and departments may charge each student additional fees to cover special materials, equipment breakage, and other

costs. For specific information about special fees, refer to the *VCU Schedule of Tuition, Fees, and Other Expenses*, or to the specific school or department section in this *Bulletin*.

Room and Board Fees

With a letter of acceptance, the student also receives a room reservation card. If residence hall space is required, the student fills out the card and returns it with a \$250 room rental prepayment. The student is notified of his or her contract for placement in a residence hall or of being placed on a waiting list for residence hall space. The \$250 room rent prepayment is credited toward the total amount due for room rent. This prepayment is refundable only if the contract is canceled in writing before June 30 for the fall semester or before December 15 for new students entering in the spring semesters. After these dates, housing contract prepayments are not refundable. Please address correspondence about housing contracts to University Housing Office, P.O. Box 842517, 711 West Main Street, Room 103, Richmond, VA 23284-2517.

Room Rent

Room rent is payable at the time tuition and other fees are due. Contracts for residence hall space are for the entire academic year, except in cases involving contracts initiated during the spring or summer terms or for students who will graduate at the end of the fall semester. Students are not released from their contracts between semesters. Only one semester's room rent is due prior to each semester.

Students should refer to the *VCU Schedule of Tuition, Fees, and Other Expenses* for exact room and board charges. In addition, students are responsible for damages to student rooms, furnishings, and common living areas.

University Board Plan

The manager of University Food Services is the contact person for all food service concerns. For additional information regarding food service, please address correspondence to the University Food Service Office, Hibbs Building, Room 225, P.O. Box 980247, Richmond, VA 23298-0247. Food Services also can be reached by calling (804) 828-1148 or the Food Services 24 hour information line, (804) 828-3663 (VCU-FOOD).

Dormitory Students are **required** to have a board plan. The only exceptions are those students living in Gladding Residence Apartments, Pharmacy D students and graduate students. Students may choose from a 10, 15 or 19 meal plan. Each plan provides a combination of board plan meals and \$100 in cash.

Non-Dorm Students. Students living off campus, commuter students, evening students, etc. have the option to purchase a package of either 50 or 100 meals per semester or any of the three plans mentioned above. Students residing off campus are encouraged to participate in a board plan and receive the same benefits of those students living in the University residence halls.

Food \$\$. This is a declining balance account that can be established on the *VCU OneCard*. It allows students the convenience of making food purchases at any University food service location without the hassle of carrying cash. Students may make deposits as frequently as necessary. This declining balance account cannot be used in place of participation in a board plan for residence hall students. You can reach the *VCU OneCard* Office at (804) 828-8385.

Other Food Service Facilities

The Student Commons features a variety of cash options for dining throughout the day. This includes McDonald's, Ukrop's Fresh Express, and the Commons Cafe.

Student Billing

The Student Accounting Department issues bills to students showing charges for the following fees: tuition, student activities fee, student government association fee, university fee, private music lessons, school major fees, special course fees, course materials fees, dental kits, disability insurance, room rent and board fees, and student health fee.

Tuition and fees for preregistered students, along with charges for room and board where applicable, are due approximately one week before the beginning of each semester. All other students not receiving financial aid must pay at the time of registration or may participate in the University Installment Payment Plan providing they meet the requirements.

Drop vs. Withdraw

Drop – charges are removed to indicate that the student never attended the class. The student is not eligible to receive financial aid.

Withdraw – results in the academic grade of “W”, charges are assessed and adjusted according to the *University Refund Policy*.

Refunds

Students shall be entitled to refunds according to the policies outlined below. Also see “Student Refund/Financial Aid Repayment Policy” under “Financial Aid.”

1. Students dropping/withdrawing from courses through the first week of class will be entitled to a 100 percent refund of tuition and fees.
2. Students withdrawing from courses through the second week of class will be entitled to an 80 percent refund of tuition and the university fee.
3. Students withdrawing from courses through the third week of class will be entitled to a 60 percent refund of tuition and the University fee.
4. Students withdrawing from courses through the fourth week of class will be entitled to a 40 percent refund of tuition and the University fee. Students withdrawing from courses after the fourth week of

class are not entitled to receive a refund of tuition and fees.

5. A full refund of the board plan charges will be made if the withdrawal from the board plan is made before the first official board plan day of the year. However, students withdrawing from the University will be granted a refund based on a daily proration throughout the term.
6. Students will not be entitled to a refund of room fees if they are suspended from the residence halls for disciplinary reasons. Unless clearance is granted through the Housing Office, students will not be entitled to a refund of room fees if they voluntarily withdraw from the University residence halls, yet remain registered for any course(s) at the University. Students will not be granted refunds unless they have completed the withdrawal procedures through the Housing Office.

The actual date of withdrawal is certified by the Office of Records and Registration. Refunds, when appropriate, are computed based on that certified date. Refunds are not given to students who do not attend classes and have not completed the required withdrawal procedure. If the refund reduction results in an overpayment on the account, a completed Refund Request Form must be submitted to the Student Accounting Department. Refund Request Forms are available in the Student Accounting Department and the Student Services Centers on both campuses. Refunds resulting from overpayments and/or changes in registration will not be processed until after the add and drop late registration process is complete. Total processing time is approximately two to three weeks.

Written application for an exception to the “University Refund Policy” must be filed in the Student Accounting Department to the Refund Waiver Appeals Committee. **Refund appeal determinations are made by the Refund Waiver Appeals Committee.**

Residency determinations, upon which tuition rates are set, are made by the Residency Officer in the Office of Records and Registration. Financial aid applications and award determinations are managed by the Financial Aid Office.

Defense Crisis Tuition Relief, Refund, and Reinstatement Guidelines

These guidelines apply to any operation, including a defense crisis, in which the President of the United States declares a sudden mobilization that includes members of the Virginia National Guard or the active or reserve forces of the U.S. armed forces who are students enrolled at VCU. Students are offered three tuition relief and refund options.

1. Drop all courses before the end of the Add/Drop period and receive a full refund – including all areas covered in number 3 below.
2. Receive a grade of Incomplete in all courses. Students residing in University housing will be released from their housing and meal contracts

and receive a full refund of these charges. The student will have twelve months after the beginning date of the next enrollment period following his or her completion of national emergency service to complete the course work.

If this re-enrollment option is chosen, the student will be withdrawn from all courses on file for the original semester with a mark of "W" and the student may be re-enrolled in the courses without further assessment of tuition or fees.

Should the student not complete the course work within the allotted option time, grade(s) of "W(s)" will be assigned and a full refund of tuition and fees processed.

3. Accept administrative withdrawal from all courses as of the effective date of the orders to active duty. If this option is elected, a full refund of all tuition, fees, and room and board charges will be made to the student. A full refund will be given for returned text books. When financial aid funds are involved, the amount recovered to the financial aid accounts will not exceed the financial portion of the direct university charges.

To initiate the process the student must provide the University registrar with a copy of his or her active duty orders and a statement electing Option 1, 2, or 3. The University registrar will post the appropriate grades and send a copy of the orders and the statement to the Director of Financial Aid and the Manager of Student Accounting.

Reinstatement

A student choosing option 1, 2, or 3 may re-enroll in the same program of studies without re-applying for admission, if the student returns within one year of completing service required as a result of the national emergency. The student should begin his or her re-enrollment by writing to the Director of Admissions regarding his or her intent to re-enroll.

Statement of Student Financial Responsibility

A student who fails to meet payments when due is assessed a late payment fee and is denied registration for future classes until he or she has paid all amounts owed to the University.

Student accounts with balances owed the University are referred to the Collection Unit. Pursuant to Section 2.1-732 et. seq., of the *Code of Virginia*, and in accordance with rules and regulations promulgated by the State Comptroller and Attorney General of the Commonwealth of Virginia, Virginia Commonwealth University will charge interest, costs and fees on all accounts past due. Students with balances owed the University are not issued degrees, transcripts, grades, or grade reports, until all charges are paid in full.

Students are reminded that they are ultimately responsible for any unpaid balance on their account as a result of the Financial Aid Office or their sponsor canceling or reducing the award.

Any communication disputing an amount owed, including an instrument tendered as full satisfaction of a debt, must be submitted to the Manager of Student Accounting, Student Accounting Department, Box 843036, Richmond, VA 23284.

VCU is participating in the Virginia Set-Off Debt Collection Act of 1981. Under the provisions of this act, a Virginia individual income tax refund is subject to the University's claim for unpaid balances of tuition and fees.

Dishonored Checks

A charge is levied for all dishonored checks.

Loan Repayment

Before graduation or withdrawal from the University, students may be required to attend loan counseling sessions. Please refer to Part VI of this *Bulletin*.

Accident Insurance

VCU is not responsible for accidents occurring to students in connection with class, laboratory, shop, field-work, athletics, student activities, travel, or other activities. However, the University offers its students approved insurance, providing substantial benefits at group rates. The insurance extends for a 12-month period beginning August 20, or from the beginning of the second semester to the next August 20, and includes coverage for accidents, hospital, medical, surgical, and other benefits for illnesses. Married students may wish to enroll their spouses and children. The University recommends, but does not require, that all students enroll in the approved student group insurance. For further information, contact University Student Health Services.

Student Accounting

The Student Accounting Department, under the Division of University Outreach, 827 West Franklin Street, P.O. Box 843036, Richmond VA 23284-3036, (804) 828-2228, is responsible for the assessment and billing of tuition, room, board, and other fees. The department also bills third-party payers for VCU charges and issues tuition and fee refunds to eligible students based on policies stated in this section. Visit the Student Accounting Web site at <http://www.vcu.edu/safweb/studentacct/>.

Financial Aid

This section contains a brief overview of selected financial aid information and is subject to revision without notice. Current details on aid programs, policies and procedures are available on the VCU Web site <http://www.vcu.edu>, select students, select financial aid.

You may request printed materials of this information by submitting a written request to one of the four financial aid counseling centers listed.

Academic Campus

Monday, Wednesday, Friday 8:00 A.M. - 5:00 P.M.
 Tuesday and Thursday 8:00 A.M. - 7:00 P.M.
 Ginter House, Shafer Street Entrance
 901 West Franklin Street
 P.O. Box 843026
 Richmond, VA 23284-3026
 (804) 828-6669
 e-mail: faidmail@vcu.edu

MCV Campus

Monday through Friday 8:00 A.M. - 4:30 P.M.

Schools of Allied Health Professions, Nursing
 and Pharmacy

Sanger Hall, Room 1-055
 1101 East Marshall Street
 P.O. Box 980244
 Richmond, VA 23298-0244
 (804) 828-9800
 e-mail: brfringe@vcu.edu

School of Dentistry

Lyons Hall, Room 309
 520 North 12th Street
 P.O. Box 980566
 Richmond, VA 23298-0566
 (804) 828-9196
 e-mail: zbarree@gems.vcu.edu

School of Medicine

Sanger Hall, Room 1-003
 1101 East Marshall Street
 P.O. Box 980565
 Richmond, VA 23298-0565
 (804) 828-4006
 e-mail: sbates@gems.vcu.edu

The role of the Financial Aid Department, under the Division of University Outreach, is to assist students applying for aid to identify financial resources to support the pursuit of their educational goals. Financial aid personnel provide information, determine eligibility and award amounts and work to ensure timely disbursement of aid awards.

VCU processed over 18,500 financial aid applications during 1997-98. More than 14,000 VCU degree and certificate-seeking students received nearly \$130 million in loans, grants and work-study.

Applying for Financial Aid

To be eligible for most federal, state, and institutional aid programs, students must be U.S. citizens or must meet eligible noncitizen criteria; be admitted to and pursuing an eligible degree or certificate program; and, in most cases, be enrolled on at least a half-time basis. In addition, students must not have defaulted on a federal loan program or owe a repayment to a federal grant program.

All financial aid applicants must submit the Free Application for Federal Student Aid (FAFSA) each year. FAFSAs are available at the VCU Financial Aid Office,

financial aid offices at other colleges and universities, high school guidance offices, and most public libraries. An electronic FAFSA is available on the VCU Financial Aid Web site.

The mailing deadline date for the FAFSA or renewal FAFSA is March 15 for freshmen and students entering programs on the MCV Campus and April 15 for all other students. Students mailing the FAFSA before the deadline may be considered for more grant dollars than those filing after the deadline. Use figures from a completed federal tax form when filling out the FAFSA. Be aware you can use estimated tax figures in order to comply with deadlines but be prepared to submit a completed tax return to VCU at a later date.

Summer Studies

Financial aid is available for summer studies to students who applied and were eligible for aid the previous academic year. Application deadlines and processing schedules for summer studies financial aid are published in the *Summer Schedule of Classes* (available in March). Processing usually is restricted to the third week of April on the Academic Campus. On the MCV Campus, summer processing extends from the first week in April to May.

Study Abroad

In most cases, financial assistance is available to eligible students for both academic year and summer approved study-abroad programs. All study must be coordinated through the VCU Center for International Programs.

Quality Assurance

VCU Financial Aid strives to deliver financial aid to eligible applicants in an equitable manner. To ensure that information is complete and accurate, student records may be selected for review at any time during an enrollment period. Internal VCU practices and policies are monitored for consistency and accuracy.

When you (and your parents, if applicable) sign the Free Application for Federal Student Aid certification, you agree to furnish documentation to support your FAFSA data. If you fail to provide documentation when requested to do so, your aid may be canceled.

Financial Aid and the University Bill

Bills for tuition, fees and other university charges are mailed by the Student Accounting Department to your permanent address. When financial aid awards are not enough to pay the university bill, the remaining balance must be paid from your personal funds by the due date. Federal Work-Study eligibility amounts may not be deducted from the university bill since the money must be earned in a work-study job.

Service and Financial Aid Appeals

Financial aid service and eligibility decisions are made by the uniform application of federal, state and

institutional regulations and policy. Students may make service or financial aid appeals. Any financial aid staff member can advise you about the appeal procedures. Reasons for an appeal might include:

1. Your family can document unusual circumstances including:
 - loss or reduction of employment earnings
 - disability or death of parent or spouse
 - separation or divorce
 - loss or reduction of untaxed income
 - losses as a result of natural disaster
 - unusually high educational program costs
 - unusual medical expenses
 - dependent and child care expenses
2. You still do not have enough money for educational expenses after considering all options.
3. You consider your financial aid service was not timely or information was not accurate.

Student Refund/Financial Aid Repayment Policy

Students who withdraw from all classes must have their eligibility for a refund calculated. When the certified date of withdrawal falls during a refund period, financial aid eligibility is recalculated. This recalculation can reduce financial aid eligibility causing the partial or complete return of aid awards to the aid program as required by federal refund policies. When funds are returned to the aid programs, it may be necessary for the student to repay refunded monies to the University from earlier living expense refunds for which they are no longer eligible after withdrawing.

Pro Rata Refund Policy. Students who receive Title IV Federal Financial Aid, who are enrolled at the University for the first time, and withdraw from all classes may qualify to have a portion of their financial aid returned to the various programs (thereby reducing amounts refunded to the student) through the tenth week of the semester.

Federal Refund Policy. Students who receive Title IV Federal Financial Aid and withdraw from all classes may qualify to have a portion of their financial aid returned to the various programs (thereby reducing amounts refunded to the student) through the eighth week of the semester.

Both of these policies are subject to an administrative fee that does not exceed the lesser of \$100 or five percent of the charges.

Program Overviews

There are three basic types of financial aid: loans, grants and work-study. Each type has different features and advantages.

1. **Loans.** In terms of total dollars available, long-term loan programs provide the most dollars. A loan is money borrowed which must be repaid at a later time. In most cases, the student is the borrower and repays the loan once he or she is no

longer enrolled in an institution of higher learning. There are a few loan programs where the parent is the borrower and begins repaying the loan while the student is still enrolled. All educational loans carry favorable interest rates. Some include interest benefits, meaning the federal government pays the interest on the loan while the student is enrolled. Student loan repayment generally begins after half-time enrollment ceases. Multiple repayment plans provide the borrower with flexible repayment options. Selected loan programs include:

- Federal Direct Subsidized Loan
- Federal Direct Unsubsidized Loan
- Federal Perkins Loan
- Federal Direct Parent Loan for Undergraduate Students
- Nursing Student Loan

2. **Grants.** Grants are gifts of money awarded without any expectation of repayment. The total dollar amount of available aid in the form of grants is less than that of total dollar amount of loans. Most grants are reserved for those students with the greatest financial need. Scholarships based on merit also are considered a member of this grant category. Selected grant programs include:

Undergraduate Programs

- Federal Pell Grant
- Commonwealth Award
- Virginia Guaranteed Assistance Program
- Federal Supplemental Educational Opportunity Grant
- College Scholarship Assistance Program
- Virginia Transfer Grant Program
- VCU Undergraduate Scholarship Program
- Departmental Scholarships

Health Profession Programs

- Scholarships for Disadvantaged Students
- Exceptional Financial Need Scholarship
- Financial Assistance for Health Profession Students
- State Dental Practice Scholarships
- Virginia Medical Scholarships
- General Assembly Nursing Scholarships
- Departmental Scholarships

3. **Work-study.** Work-study is a form of financial aid that pays wages for work performed through employment. Work study positions are located on- and off-campus in approved locations.

Graduate Assistantships and Fellowships

University graduate teaching and research assistantships and fellowships are awarded to continuing and newly-admitted graduate students. Eligibility is based on a variety of criteria. Students interested in these awards should inquire directly to the school or department of enrollment. Students in the process of applying for admission should indicate their interest in such support. Some programs include a separate application for support with the application for admission.

Special rules, contained in the *VCU School of Graduate Studies Policies and Procedures Statement on*

Graduate Fellowships and Assistantships, apply to graduate assistants. A copy of this publication is included with the graduate dean's official assistantship/fellowship award letter. Such awards must be coordinated with any other financial aid. Any stipend support is reported to the Internal Revenue Service and is subject to IRS rules.

Veteran and Reservist Educational Benefits

For information on Veteran and Reservist Educational Assistance eligibility, contact:

Office of Veteran Services
Financial Aid Department
901 West Franklin Street, Room 206C
Richmond, VA 23284-3026
(804) 828-6166
e-mail: mparham@vcu.edu

Eligible veterans must comply with the following requirements to receive educational benefits as students:

1. You must apply or be accepted into a degree- or certificate-seeking program.
2. You must request certification after registering for courses each semester and each summer session from the Office of Veteran Services.
3. You are eligible for benefits for only those courses taken towards a degree or certificate program.
4. You are not eligible for benefits for courses taken on an audit basis. If repeating a course or taking a course with no credits, you must notify the Office of Veteran Services.
5. You are responsible for ensuring that your transcripts are evaluated for transfer credits to be accepted by VCU. You must submit this information to the Office of Veteran Services for transmittal to the Veteran's Administration Regional Office.
6. You must notify the Office of Veteran Services if you drop or withdraw from classes, or stop attending VCU.

Virginia War Orphans Education Program

The Virginia War Orphans Education Program provides educational assistance for children of certain veterans or service personnel. Applications are available at the VCU Office of Veteran Services. Students should begin the application process at least four months before beginning studies at VCU.

Eligibility for this assistance is contingent upon the following:

1. The applicant must be no less than 16 and no more than 25 years old.
2. One of the applicant's parents must have served in the U.S. Armed Forces and must be permanently or totally disabled due to war or other armed conflict; or

3. One of the applicant's parents must have died as a result of war or other armed conflict; or
4. One of the applicant's parents must be listed as a prisoner of war or missing in action.
5. The applicant's parent, on which eligibility is based, must have been a resident of Virginia at the time of entry into active military duty; or
6. The applicant's parent, on which eligibility is based, must have been a resident of Virginia for at least ten consecutive years immediately before date of application; or
7. The surviving parent must have been a resident of Virginia for at least ten years prior to marrying the deceased parent, or must have been a resident of Virginia for at least ten consecutive years immediately prior to the date on which the application was submitted by or on behalf of such child for admission to any educational or training institution in Virginia.

Those eligible for the Virginia War Orphans Education Program are entitled to a tuition-free education at state-supported educational or training institutions on an annual basis. (Summer school also may be included in the annual certification of students.) Eligible students can use this benefit to pursue any vocational, technical, undergraduate, or graduate program of instruction. Generally, programs listed in the academic catalogues of state-supported institutions are acceptable provided they have a clearly defined educational objective, i.e., certificate, diploma, or degree.

IV

P A R T

Division of Student Affairs

The University offers a wide variety of services, facilities and resources to its students, many of which are the administrative responsibility of the Division of Student Affairs.

Office of the Vice Provost for Student Affairs

Dr. Henry G. Rhone

Vice Provost for Student Affairs

Carmen Bell

Administrative Assistant

Jean M. Yerian

Associate Dean of Student Affairs

The Office of the Vice Provost for Student Affairs is located in the Sitterding House at 901 Floyd Avenue, P.O. Box 843017, Richmond VA 23284-3017. The telephone number is (804) 828-1244.

The mission of the Division of Student Affairs is to help VCU students learn and develop from their educational experiences, to improve the quality of student life through attention to the varied aspects of the campus environment, to provide quality services that are responsive to student needs, and to effectively communicate and collaborate with students, faculty, alumni, families, and other publics.

Campus life departments of the Division are the Office of the Dean of Student Affairs; the Office of the Dean of Student Affairs, MCV Campus; Larrick Student Center; University Student Commons and Activities; the Career Center; University Counseling Services; University Student Health Services; Recreational Sports; and University Housing and Residence Education.

Special programs in support of students' academic success are the Office of New Student Programs, the Office of Academic Support, Services for Students with Disabilities (Academic Campus), and the Office of Minority Student Affairs.

In addition, the Division provides administrative support for key policies of the University, including the *VCU Honor System* and the *Rules and Procedures*.

Office of the Associate Vice Provost and Dean of Student Affairs

Dr. William H. Duvall

Associate Vice Provost and Dean of Student Affairs

Norma A. Pierce

Coordinator for Communication

Karen Ann Lee

Public Relations Assistant Specialist

The Office of the Associate Vice Provost and Dean of Student Affairs serves as a resource for students, parents of students, faculty, and staff who have problems or concerns with their interaction with one another or with the University. The dean's office assists in resolving issues or refers inquirers to the appropriate person elsewhere at VCU.

The dean's office is also actively involved in understanding students and their needs, improving the quality of student life, and collecting and disseminating information important to students. Printed publications of this office include the *VCU Resource Guide* and the *Handbook for Parents*. Most Division of Student Affairs publications are available on the World Wide Web at www.students.vcu.edu.

The dean sits on a number of University committees, participates in orientation activities, provides supervision for several departments of the Division of Student Affairs, and serves as a key administrator for several major policy statements of the University including the *VCU Honor System*.

Students, parents of students, and staff who have issues they wish to discuss or who are interested in various programs and opportunities should visit the dean's office, located in the Sitterding House, 901 Floyd Avenue, P.O. Box 843017, Richmond VA 23284-3017. Telephone (804) 828-8940 or send e-mail to whduvall@vcu.edu.

Office of the Dean of Student Affairs, MCV Campus

Dr. Robert L. Clifton

Dean of Student Affairs, MCV Campus

The Office of the Dean of Student Affairs, MCV Campus, provides supervision for the operation of Larrick Student Center; advises the MCV Campus Student Government Association, participates in orientation sessions for each school on the MCV Campus, and is the primary administrator of the *Rules and Procedures of Virginia Commonwealth University*.

The dean's office is located in Bear Hall, 10th and Leigh Streets, P.O. Box 980243. Telephone (804) 828-0525 or send e-mail to rlclifto@vcu.edu.

Student Center (MCV Campus)

James W. Miller

Manager, Larrick Student Center

The **Jonah L. Larrick Student Center**, located at 641 North Eighth Street, is a circular building with dining facilities on the first level and activity areas on the second level. The first floor cafeteria is available to boarding students as well as others on a cash basis. The lounge upstairs accommodates up to 375 people and is used for movies, dances, lectures, receptions, art exhibitions and other events. Offices are provided for the MCV Campus Student Government Association, the *X-Ray* yearbook and the MCV Campus Honor Council. Also available: separate areas for billiards and table tennis, television and listening to music.

The Student Center Board, composed of students, faculty and administrators, determines procedures, programs and priorities for the Larrick Center and helps determine student interests and needs.

To reserve activity space or for more information, telephone (804) 828-3438.

Larrick Center hours:

Monday-Friday 8:30 A.M. - 11:00 P.M.
Saturday, Sunday 1:00 P.M. - 11:00 P.M.

University Student Commons and Activities, Academic Campus

Vacant

Director

Felicia L. Keelen

Associate Director for Student Activities

John P. Leppo

Associate Director, Building Services

Henrietta Brown

Manager, Student Organization Accounts

Kirsten Hirsch

Commuter Services Specialist

Janet Howell

Reservations and Events Manager

Yolanda Jackson

Student Activities Specialist

The University Student Commons is a gathering place for the VCU community on the Academic Campus – students, faculty, staff, alumni and guests. The Commons provides an array of programs, facilities and services to meet the needs of daily life on campus. All the facilities and services in the Commons are conveniently accessible to people with mobility impairments.

The Commons is located at 907 Floyd Avenue, P.O. Box 842032, Richmond VA 23284-2032. Telephone (804) 828-1981 or e-mail bhall@saturn.vcu.edu. Building hours during the academic year:

Monday-Thursday 7:00 A.M. - 12:00 A.M.
Friday 7:00 A.M. - 1:00 A.M.
Saturday 10:00 A.M. - 1:00 A.M.
Sunday 12:00 P.M. - 11:00 P.M.

(Holiday and Summer Session hours are posted.)

Information services of the Commons. The Information Center is staffed by students ready to field any VCU-related question. Stop by, or call (804) 828-1981.

Stay-In-Touch Television (SIT-TV), a system of video monitors located throughout the Commons, displays up-to-the-minute information about campus services and events as well as local weather and national news and sports. The *Academic Campus Calendar of Events* is distributed monthly, both on paper and on the World Wide Web.

Public-use spaces in the Commons. The Lobby Lounge is the crossroads of the Academic Campus – a great place to meet friends or watch people. The Plaza and Commuter Lounges offer a more quiet atmosphere. A Smoking Lounge is located at the north end of the second floor. Art exhibition space includes the Art Gallery near the Information Center and the Student Art Space on the second floor of the theater. Break Point, the Commons game room, features pool tables, darts, table tennis, board games, the latest video games and regularly scheduled leagues and tournaments. Meeting and event facilities include three conference rooms, the Forum Room, the Commons Theater, the Alumni Association Board Room and the Commonwealth and Capital ballrooms.

The Common Ground, on the lower level, offers students lots of lounge space, large-screen television and free access to the World Wide Web and campus e-mail on a daily basis plus a regular schedule of alternative films, concerts, comedy shows and other entertainment.

The Reservations and Events Office schedules the use of the Commons space as well as non-instructional use of some other Academic Campus facilities. To contact this office, telephone (804) 828-9502.

Dining and retail services include the first floor food court, open for breakfast, lunch and dinner; hot meals and fast food on a cash or card debit basis. online@VCU is a technology store offering computer hardware and software. Other facilities of the Commons include a self-service U.S. Post Office station, two Central Fidelity ATM locations, pay telephones, coin-operated photocopiers, and vending machines.

Commuter Student Services

The Commons and Activities provides several services designed to reduce the challenges nonresidential students face. The Commuter Lounge includes a Ride Board to connect drivers and riders for local and long-distance carpooling, connect ports to the campus network for students' laptop computers, a microwave for heating sack lunches, and lockers for rental by the semester. (Coin-operated lockers for short-term storage of personal belongings are located in Room 141.) Commuter assistants in the Off-Campus Housing Office provide referrals to other campus services and local bus service schedules.

The Off-Campus Housing Office offers assistance in the location of non-University controlled residences that rent to students on a nondiscriminatory basis. (However, the University does not control or monitor privately operated off-campus housing facilities.) The office provides free listings of available housing for VCU students, faculty and staff via computer-generated lists of rental apartments, rooms and houses; roommate requests; and houses for sale. Most listings are in the Fan District near

the Academic Campus. The bureau also makes available a selection of brochures on topics ranging from tenants' rights to Richmond apartment guides. It is advisable for the student to inspect off-campus accommodations before leasing. Good quality apartments and rooms are limited and students should make arrangements early.

The Off-Campus Housing Office is located in the Commuter Lounge on the first floor of the Commons Theater at 907 Floyd Avenue, P.O. Box 842032, Richmond VA 23284-2032. Telephone (804)-828-6492.

Student Activities Center

The SAC in the Commons supports and encourages numerous opportunities for students to participate and provide leadership in social, cultural, service, and recreational activities and organizations. Students determine their own level of involvement, bearing in mind the need for balance between academic and co-curricular commitments.

The SAC is located in Commons Room 018. The mailing address is P.O. Box 842035, Richmond VA 23284-2035. Telephone (804) 828-3648 for more information.

Involvement opportunities include the Academic Campus Student Government Association and its sub-committees (see "Students and University Governance"). Other student groups include the Black Caucus, fraternities and sororities, and more than 160 other departmental, religious, political, and special interest clubs and organizations. A complete directory of student organizations and information about how to become involved are available in both printed and World Wide Web versions.

Programs and activities presented through student and staff collaboration include New Student Night at the Commons, Student Organization and Volunteer Opportunities Fair, Fall Block Show, Commons Collage, Homecoming, VCU Celebrates the Holidays, Kwanzaa, Black History Month, Women's History Month, Alcohol Awareness Weeks, SpringFest, the Inter-Cultural Festival, Leadership and Service Awards Ceremony, and Summer Programs.

Leadership education available through the SAC includes workshops, retreats and a resource library. Service-learning programs provide a link between VCU and the Richmond community through both one-time service initiatives and ongoing volunteer opportunities. Activities include blood drives, sponsorship of tutoring programs (Carver Promise and Adopt-A-School at Clark Springs Elementary), and the Alternative Spring Break program. An annual Volunteer Fair provides opportunities to meet representatives from community agencies seeking volunteers. Staff members will provide interested students with a list of service opportunities, help identify programs of interest, and facilitate contact with those agencies.

Honor Societies

Chapters of the following national honor societies are located at VCU and annually recognize students and faculty for their service and scholarship:

General Societies

Golden Key National Honor Society – scholarship
Phi Eta Sigma – freshman scholarship
Phi Kappa Phi – scholarship

Discipline Societies

Alpha Kappa Delta – sociology
Alpha Phi Sigma – criminal justice
Alpha Omega Alpha – medicine
Alpha Sigma Chi – medical technology
Beta Alpha Psi – accounting
Beta Gamma Sigma – business
Delta Pi Epsilon – business education
Financial Management Association
National Honor Society – finance
Kappa Tau Alpha – mass communication
Omicron Delta Epsilon – economics
Omicron Kappa Upsilon – dentistry
Pi Kappa Lambda – music
Pi Sigma Alpha – political science
Rho Chi – pharmacy
Phi Delta Kappa – education
Phi Theta Epsilon – occupational therapy
Phi Sigma – biological sciences
Sigma Delta Pi – Spanish
Sigma Zeta – medicine, dentistry, pharmacy, and nursing
Sigma Theta Tau – nursing
Sigma Xi – scientific research
Sigma Pi Sigma – physics
Sigma Phi Alpha – dental hygiene
Sigma Phi Omega – gerontology
Psi Chi – psychology

MCV Campus students who excel in scholarship and leadership may be eligible for membership in honor societies related to their fields of study. In addition, MCV Campus students who meet established criteria may be elected to one or more of the following societies:

- **Phi Kappa Phi** is a national honor society that recognizes and encourages superior scholarship. It accepts members from applied and professional fields of study as well as from letters, arts, sciences and humanities. The VCU chapter was installed in 1977.
- **Sigma Xi Society** is a national honor society founded for the encouragement of research in science and recognizes individuals for research achievement or promise.
- **Alpha Sigma Chi** is an MCV Campus organization founded in 1938. It recognizes those individuals who excel in leadership and service to colleagues, school and the University.
- **Sigma Zeta** is an honorary science fraternity that encourages and fosters knowledge of the sciences and recognizes attainment of high scholarship in the sciences. Gamma Chapter was installed at MCV in 1926.

Student and University Governance

The University Council, an advisory body to the University President, is the highest internal governance body at VCU. The council is made up of 27 faculty members, 10 students, 10 administrators, 10 classified staff members, and four subcommittees – the Committee on Student Affairs, the Committee on Academic Affairs, the Committee on Faculty Affairs, and the Committee on Classified Staff Affairs.

Academic Student Government Association

The Academic Campus Student Government Association is composed of senators elected from the college and each of the six schools on the Academic Campus and an elected student body president and vice president.

The Academic Campus SGA provides opportunities for students to express themselves in the development and implementation of VCU policies, to develop and coordinate services and activities for students, and to budget and allocate student activities fees. Elections for student senators, student body president and student body vice president are held each spring. Appointments of at-large senators and student representatives to University committees are made as vacancies occur throughout the year.

The Student Government Association is organized into standing committees – Steering, Activities Programming Board, Appointments, Appropriations, Elections, Human Relations, Legislative Issues, Publicity, and Student Services – and nonelected at-large members are encouraged to join most of these committees. All meetings of the Senate are open to the public.

Additional information about the Academic Campus SGA is available from the SGA office in the Student Activities Center or by calling (804) 828-7551.

Many other opportunities to participate in departmental and/or school decision-making exist for students on the Academic Campus. Contact department or deans' offices for more information on committee participation.

MCV Campus Student Government Association

The student body organization on the MCV Campus was formed to promote college activities; to promote a concern among students for each other and a greater identification with the University; to express a unified voice in matters that affect the best interest of the student body; and to foster a constructive relationship between the University and the community and state.

Representatives to the MCV Campus Student Government Association are elected from each class in each health science school on the basis of one representative per 40 students. SGA meetings are held monthly from September through April, except December, and are open to all MCV Campus students. The association sponsors such projects as blood drives and University Guest Day and provides a forum for discussion of student ideas and suggestions.

Student Media (Academic Campus)

Commonwealth Times

Students write and edit the *Commonwealth Times*, a campus newspaper containing news, features, editorials, and reviews of timely topics. The offices are located in Room 1149 of the General Purpose Academic Building, 901 West Main Street, P.O. Box 842010, Richmond, VA 23284-2010, (804) 828-1058.

The Vine

This newspaper presents news of VCU's African-American students. The office is located in Room 018B of the Student Activities Center, 901 Floyd Avenue, P.O. Box 842035, Richmond, VA 23284-2035, (804) 828-3648.

Writers' Corner

This publication produced by the English Club showcases creative writing by VCU students.

WCVW

The student-operated radio station uses a carrier current line to some residence halls and cafeterias. Programming includes music, information, news, public affairs, and public service announcements. WCVW studios and offices are located in the General Purpose Academic Building, 901 West Main Street, P.O. Box 841961, Richmond, VA 23284-1961, (804) 828-1057.

University Career Center

Vacant

Director

Vacant

Assistant Director

Thomas J. Halasz

Assistant Director

Margaret B. Reynolds

Employer Development Specialist

The Career Center's main office is located on the first floor of the University Student Commons, 907 Floyd Avenue. Hours:

Monday-Thursday 8:00 A.M. - 6:00 P.M.

Friday 8:00 A.M. - 4:30 P.M.

On the MCV Campus, career counseling is available Wednesdays in Hunton Hall, 302 North 12th Street.

For both locations, telephone (804) 828-1645.

The Career Center assists students and alumni in identifying and achieving career goals. Specifically, the Career Center staff helps students to discover more about themselves, to explore career options, to decide on career directions, and to develop sound strategies for realizing their career goals.

The Career Center offers career and graduate education information, including computerized career as well as graduate school searches; a career library of more than 1,000 printed volumes and a video collection on job-search topics; computerized self-assessment, job search and Internet information access in the Center's

computer lab; information on employers (such as annual reports, recruiting brochures, and directories); and graduate and professional school information.

Career planning is offered on a daily basis in individual sessions with a career counselor using assessments such as Strong Interest Inventory, Campbell Interest and Skill Survey, Myers-Briggs Type Indicator, and Eureka Micro-Skills. Students may attend presentations on topics such as job search skills, résumé development and interviewing techniques. Students may see staff counselors on an individual basis, by appointment or during designated drop-in times.

Through the Alumni Career Advisers network, students can talk with VCU alumni already active in their career fields, gaining information and valuable contacts.

The Career Center maintains a bank of part-time, full-time, internship and seasonal openings including on- and off-campus Work-Study positions for Virginia students who are eligible for Work-Study. These are available 24 hours a day through the Career Center Web site (<http://www.vcu.edu/safweb/careers/ucchome.html>).

Students can learn job search skills by participating in small group sessions on such topics as résumé writing and interview techniques. *Strategies*, a Career Center guide for students that covers career development, job search, and graduate school planning, is available on the Career Center Web page.

Seniors finishing within the academic year use the Career Center to interview with business, industry, government, and education representatives who visit the office recruiting prospective graduates for openings in their organizations. Students registered with the center's *1stPlace!* database are included in referrals to employers and have access to job listings on computer. ALEX, VEC's Automated Labor Exchange, is also available at the center.

All students are urged to use the resources of the University Career Center.

University Counseling Services

Dr. John G. Corazzini

Director

Dr. Christy Riebeling

Staff Psychologist

Dr. Kathleen J. Scott

Staff Psychologist and Coordinator of the Training Program

Dr. Napoleon L. Peoples

Staff Counselor

Joy G. Bressler

Clinical Social Worker

Kristi M. Vera

Staff Social Worker

Students with personal, social, vocational or educational needs may find help from University Counseling Services. The goals of UCS are to promote students' academic success and personal growth as well as to assist students who are experiencing stress or crisis.

The University Counseling Service offers services from two offices, one on each campus. The contact information for each follows.

Academic Campus

Commons Room 225, 907 Floyd Avenue, P.O. Box 842525, Richmond VA 23284-2525. (804) 828-6200.

Monday-Thursday 8:00 A.M. - 6:00 P.M.

Friday 8:00 A.M. - 4:30 P.M.

During semester break, spring break and summer, the office closes at 4:30 p.m. daily.

MCV Campus

Hunton Hall third floor, 302 North 12th Street, P.O. Box 980238, Richmond VA 23298-0238. (804) 828-3964.

Monday-Friday 8:00 A.M. - 4:30 P.M.

University Counseling Services can meet students' needs in a variety of ways:

Group Counseling. Ongoing psychotherapy groups focus on personal and social concerns including drug and alcohol related issues, eating disorders, self esteem, depression, sexuality, problems with parents or peers, stress, career choice and identity.

Counseling and Psychotherapy. Individual and couple work is designed to deal with personal and interpersonal issues.

Academic Success Program. Weekly workshops and computerized assessment and interventions focus on development of the practical skills and academic strategies necessary for students to achieve academic excellence in the classroom.

Consultation and Outreach. Presentations, workshops and staff consultation are available to student organizations, academic departments and other groups on issues relevant to each group's needs.

Multicultural Training Program. Consultation and workshops are designed to prepare students, faculty and staff to function effectively in a multicultural environment.

Career Counseling. Individual sessions designed to clarify career direction and satisfaction.

Testing. Vocational, intellectual and personality assessments.

Available to both day and evening students, counseling services are free except for small fees associated with testing. All students requesting services will be guided to the appropriate program or counseling service based on an individual assessment of needs and concerns.

University Student Health Services

Betty Anne Johnson

Director

Betty Reppert

Associate Director for Health Education

Doris Rice

Assistant Director for Administration

Academic Campus

Gladding Residence Center, Suite 159, 711 West Main Street, P.O. Box 842022, Richmond VA 23284-2022. (804) 828-8828.

Monday-Thursday 8:00 A.M. - 5:00 P.M.

Friday 10:00 A.M. - 5:00 P.M.

MCV Campus

VMI Building, Room 305, 1000 East Marshal Street, P.O. Box 980201, Richmond VA 23298-0201. (804) 828-9220.

Monday-Thursday 8:00 A.M. - 4:30 P.M.

Friday 10:30 A.M. - 4:30 P.M.

University Student Health Services (USHS) offers quality primary health care for treatment of acute and chronic illness. In addition to diagnosis and treatment, the service emphasizes prevention of illness through screening, counseling, and health education. Full-time students are required to participate and must pay the student health fee. Part-time students who elect to participate in the service must pay the full student health fee.

The service is staffed by physicians, physician assistants, nurse practitioners, registered nurses, pharmacists, and health educators.

Services offered by USHS include general medical, allergy, and gynecology clinics; pharmacy and laboratory; after-hours emergency care; and health education and public health programs.

All educational activities sponsored by USHS are available to all students.

Treatments for injury and hospitalization are not covered by USHS, and students are urged to join the University-sponsored group health plan.

Immunization Requirements

Virginia law requires all **full-time** students to submit an official certification of immunization to **University Student Health Services** prior to registration. Immunization records may be mailed, faxed or brought to Student Health at the Academic Campus as listed previously.

Do not mail, fax, or turn in your immunization record anywhere else. (If record is turned in at STAR, put it in the box marked immunizations!) Do not send immunizations to Admissions.

It is strongly recommended that all students make copies of their immunization record. For questions or blank immunization records, call the Academic campus as listed previously.

An immunization form can be found in the *Handbook for Admitted Students*. The form can be signed by the student's health care provider after all the necessary information has been transferred onto the form. Other acceptable records would be immunization dates from military records, health department records, and high school records.

If documented evidence of required immunization proof cannot be provided, students must get the necessary immunizations from their health care provider, local health department, or through Student Health.

For all students born AFTER December 31, 1956, student must provide:

Tetanus: Documentation of Tetanus booster within the last ten years.

Rubeola (Red Measles): 2 doses, BOTH given after the first birthday, at least one month apart, and AFTER 1967, OR physician certification of diagnosis of Rubeola, including the month and year of occurrence, or documentation of positive Rubeola titer with copy of lab result.

Mumps: 1 dose given AFTER first birthday and AFTER 1967, or physician certification of diagnosis of Mumps, including month and year of occurrence, or documentation of positive mumps titer with copy of lab result.

Rubella (German Measles): Documentation of Rubella vaccination given after the first birthday and after June 9, 1969, or documentation of positive Rubella titer with copy of lab result.

NOTE:MMR given after first birthday and after April 30, 1971 may be used to document Rubeola, Mumps and/or Rubella immunization. Two MMR's would be needed to fulfill Rubeola requirement.

PPD: Provide result of PPD (Mantoux) within last twelve months (time or monovac not acceptable). If PPD positive, chest X-ray required. Include copy of chest X-ray report and dates of treatment with INH,if indicated.

For students born PRIOR to January 1, 1957 ONLY, student must:

Tetanus: Documentation of Tetanus booster within the last ten years.

Rubella (German Measles): Documentation of Rubella vaccination given after the first birthday and after June 9, 1969, or documentation of positive Rubella titer with copy of lab result.

PPD: Provide result of PPD (Mantoux) within last twelve months (time or monovac not acceptable). If PPD positive, chest X-ray required. Include copy of chest X-ray report and dates of treatment with INH, if indicated.

Health Insurance

The University is not responsible for accidents occurring to students in connection with class, laboratory, shop, fieldwork, athletics, student activities, travel, or any other activity.

The University offers its students an approved insurance plan providing substantial benefits at group rates. The insurance extends for a 12-month period beginning August 18, or from the beginning of the second semester to the next August 18, and includes coverage for accidents, hospitalization, medical, surgical, and other benefits for illnesses. Married students may enroll spouses and children. The University strongly recommends but does not require that all students enroll in student group health insurance.

Complete information about enrolling is available from University Student Health Services at both locations.

Health Promotion

The Office of Health Promotion, located in the Gladding Residence Center, Suite 165, provides information, programming and other resources in support of students' continuing health and well being. The resource library includes videotapes and Internet access as well as printed publications. The staff are available for presentations to classes and student organizations on a variety of topics related to college student health issues. The staff also supports and trains four peer-education student organizations in a program called collectively REACH (Rams Educating About Campus Health). These peer programs address substance abuse, nutrition, sexual activity, sexual assault and relationship violence.

Sexual Assault/Substance Abuse Education Programs

A component of the Office of Health Promotion is Sexual Assault/Substance Abuse Education Programs, which has offices in the Commons, Rooms 220-221. The offices serve as the main point of contact for information and services in these areas. The coordinators provide or arrange for presentations about alcohol, and other drugs, or issues related to sexual assault for student groups, classes, and special events such as Alcohol Awareness Weeks and Sexual Assault and Domestic Violence Awareness Month. This office also offers "On Campus... Talking About Alcohol" (OCTAA), a primary prevention program, for students and professionals. This office offers leadership for the campus on sexual assault policy, protocol, educational programming, and services development.

In addition, this office helps coordinate the efforts of VCU's Rape Services Consultants Program, a group of trained volunteers from the University's faculty and staff, who help survivors of sexual assault obtain services. Students wishing to use this service may make contact by calling any one of several offices on campus.

- Sexual Assault Education Programs, (804) 828-2085
- Substance Abuse Education Programs, (804) 828-2086
- University Counseling Services, (804) 828-6200

University Housing and Residence Education

Bernard A. Mann

Director of Housing

Jane Grassadonia

Director of Residence Education

Living accommodations on campus are provided for the convenient housing of students and to further the educational objectives of the University. Approximately 2,500 students live in University-operated housing, which varies in capacity and style, including high-rise residence halls, suites and garden-style apartments.

VCU believes that residence hall life provides an opportunity for students to gain a variety of personal learning experiences that supplement and complement the formal learning gained in classrooms and laboratories. The housing program seeks to make residences a place where students learn to meet and live successfully with other students and to assume major responsibility for their own lives and the atmosphere of their living environment. University housing also helps students participate in many educational and social programs and develop leadership skills through participation in residence, governmental, social, and judicial organizations.

Residence education staff members facilitate these objectives and are always available to assist students in the residence areas. Although acceptance for admission to the University does not guarantee housing facilities to the new student, all students in past years desiring student housing have been accommodated. See the "Room and Board Fees" section in Part III of this *Bulletin*.

Rooms in University-operated housing are rented for the entire academic year of nine months unless other

arrangements are made. The student, parent of the student, or student guardian contracts to pay the rent for this period.

All rooms are furnished adequately, but students may wish to add personal touches and conveniences of their own. As the buildings vary in age and occupancy, it is best to wait until arrival to decide on any extra furnishings. Students should provide their own pillows, bedspreads, linens, and blankets. Coin-operated washers and dryers are located in each building.

For more information, contact the Housing Office, Gladding Residence Center, 711 West Main Street, P.O. Box 842517, Richmond, VA 23284-2517. Telephone (804) 828-7666.

Recreational Sports

Susan Ivie Boling

Director

Tom Diehl

Associate Director

Martin Beall

Aquatic/Recreation Coordinator

Jennifer Chapman

Assistant Director

David Heflin

Assistant Director

Greg Elliott

Coordinator, Outdoor Adventure Program

Vacant

Assistant Coordinator, Outdoor Adventure Program

Dawn Kenny

Coordinator, Fitness and Wellness Programs

A variety of facilities, services, and programs designed to meet the leisure and health needs of the VCU community are coordinated by the Recreational Sports staff. All currently enrolled students with a valid ID are eligible to use all facilities. All facilities also are available to people from the following groups who purchase a membership: spouses of students, alumni, faculty, spouses of faculty members, classified and hourly staff, spouses of classified and hourly staff members, employees of the Research Park and MCV Physicians. (Membership for spouses of MCV Physicians members are not offered at this time.)

Recreational Sports Facilities

On the Academic Campus, the **Cary Street Recreation Complex** offers a gym floor that can be used to play basketball, volleyball, or badminton; a spacious weight room with both machine and free weights; a wooden aerobics/dance floor; four racquetball courts; and a large assortment of fitness equipment. The complex also features a lighted artificial-turf field, jogging track, and lighted outdoor basketball courts.

The **Outing Rental Center** is also administered by Recreational Sports.

Additional facilities on the Academic Campus include lighted tennis courts near the Cary Street Complex, which are administered by the Athletic Department. An indoor pool, administered by the Health, Physical Education, and Recreation Department, is available on a

limited basis in the basement of the Franklin Street Gym. For additional information, call (804) 828-6219.

The **MCV Campus Recreation and Aquatic Center**, located at 10th and Turpin streets, includes a gym with playing courts and workout areas complemented by the new Aquatic Center, housing a 25-meter, six-lane swimming pool, and a new lighted outdoor tennis court.

The **Recreation Center** features a gym floor that can be used for basketball, volleyball and indoor tennis; a fitness center with selectorized and free weight equipment; numerous racquetball and squash courts; and multipurpose rooms.

The **Aquatic Center** features recreational swimming learn-to-swim classes; and water fitness and sports activities. For additional information, telephone (804) 828-6100.

The addition of the new \$27 million Stuart C. Siegel Center, to be completed in Fall 1998, will include over 34,000 square feet for the recreation component and when the main arena is used for recreation, another 45,400 square feet will be available. This center also will include an aerobic/multipurpose studio, weight/cardiovascular fitness center, a multipurpose gym for indoor soccer and floor hockey, and a wellness resource center. The main offices for Recreational Sports will be relocated to this facility.

Recreational Sports Programs

Intramural Sports. Available on both campuses, these sports offer students organized men's, women's and co-recreational leagues and tournaments. Activities include traditional team sports such as flag football, soccer, volleyball, basketball and softball as well as individual and dual sports such as tennis, racquetball and table tennis.

Fitness Programs. Offered at both recreation centers, these programs include classes in step aerobics, weight training, yoga, and some dance. Special programs include wellness days, personal training, and special Fitness Week activities.

Sport Clubs. These clubs give students the opportunity to train and compete on a higher level than is offered by the Intramural Sports Program. Currently registered clubs include men's lacrosse, men's rugby, judo, aikido, shotokan karate, taekwon do karate, ski and snowboarding, and fencing. For information about these clubs or about starting a new club, call Recreational Sports.

Special Events. One-day events are offered to provide short-term opportunities to participate. These include a rowing regatta, Challenge Triathlon, golf outings and family programs.

Outdoor Adventure Program and Outing Rental Center. This program and center provide a variety of outdoor recreational opportunities for students. Organized excursions with experienced trip leaders include camping, kayaking, white water rafting, canoeing, caving, climbing, bicycling, backpacking, windsurfing, and cross-country skiing. Many OAP trips are designed for beginners. All necessary equipment is included in the trip fees. Summer and holiday trips are

provided including downhill skiing in Vermont, sailing in the Bahamas and more.

For students planning their own outdoor activities, equipment can be rented at the Outing Rental Center. For a nominal fee, canoes, backpacks, tents, and cross-country skis can be rented on a short-term basis.

The Outdoor Adventure Leadership Program teaches interested student volunteers a variety of outdoor skills and prepares them to lead wilderness trips.

Information on trips and rentals is available at the Outing Rental Center. For additional information, call (804) 828-6219.

University Policies and Procedures

A number of policies and regulations at VCU affect students, and many of these are printed in Parts II, III, and VI of this *Bulletin*. Three policy documents are of particular interest to students.

The *Virginia Commonwealth University Rules and Procedures* document outlines the rights, responsibilities and privileges of each member of the University community and describes cases when disciplinary action, including separation from the University, may be taken against a member of this community as a result of prohibited behavior as outlined in this document.

The *VCU Honor System* defines academic dishonesty and provides a procedure for judging alleged violators of academic integrity.

The *Grade Review Procedure* outlines the process whereby students may appeal grades that they feel have been assigned unfairly.

Each student is responsible for being familiar with the provisions of all University policies and regulations. The three policy documents described above are printed in full in the *VCU Resource Guide*, which is distributed each year on both campuses and made available on the World Wide Web. Students who have questions about these or other policies are invited to call or visit:

- Office of the Dean of Student Affairs in the Sitterding House, 901 Floyd Avenue, P.O. Box 843017, Richmond VA 23284-3017, (804) 828-8940.
- Office of the Dean of Student Affairs, MCV Campus, in Bear Hall, Room 104, 10th and Leigh streets, P.O. Box 980243, Richmond VA 23298-0243, (804) 828-0525.

VCU Honor System

VCU recognizes that honesty, truth, and integrity are values central to its mission as an institution of higher learning.

And so, VCU must act to maintain these values, even to the point of separating those who violate them from the University. The *VCU Honor System* describes the responsibilities of students, faculty, and administration in upholding academic integrity, while respecting the rights of individuals to the due process offered by administrative hearings and appeals. All people enrolled in any course or program at VCU and all people supervising the learning of any student are responsible for acting in accordance with the provisions of the *VCU Honor System*.

This honor system gives definitions and illustrative examples of six acts which are violations of the policy, namely: cheating, plagiarism, facilitating academic dishonesty, abuse of academic materials, stealing, and lying. There are six penalties for students found guilty of these honor system violations. They are honor probation, assignment of grades, suspension, expulsion, revocation, and other relevant sanctions.

See the *VCU Honor System*, printed in full in the *VCU Resource Guide*.

Office of New Student Programs

Robert Aaron

Coordinator of New Student Programs

The programs administered by this office are designed to serve the needs of all entering freshmen and new transfer students and their families. The **STAR program**, each summer, fall and spring, provides new students the opportunity to take placement tests, meet with a faculty adviser, and register for the first semester's classes. Students' families are provided programs on VCU services.

New Student Orientation is a three-day program for new students that takes place immediately before fall classes begin. During orientation, students meet faculty, staff, administrators, and upper-class students. They attend information sessions, workshops, and campus tours.

VCU 101 Introduction to the University is a one-credit course that all entering undergraduate students are encouraged to take. This 10-week course is taught by faculty and Student Affairs administrators in small-class settings. Students assess their expectations and evaluate their academic strengths and career goals. Through lectures, guest speakers and individual projects, students discover the VCU resources and services designed to help them solve problems and achieve a personally rewarding, successful academic program. For additional information, see Part I of this *Bulletin*.

VCU Family Weekend is designed to bring parents and families back to see the University after students have registered and attended classes. Each school and college of the University has a chance to meet with the families of its students. Family members participate in a number of programs and special events that highlight the faculty, students and activities of VCU.

For more information about any of these programs, contact the Office of New Student Programs, located in Commons Room 219, 907 Floyd Avenue, P.O. Box 842032, Richmond VA 23284-2032; (804) 828-3700.

Office of Minority Student Affairs

L. Victor Collins

Director

The Office of Minority Student Affairs (OMSA) provides supportive services to ethnic, racial, and cultural minority groups that are substantially represented at the University. VCU is committed to a multicultural,

diverse student body, and OMSA offers assistance to students and faculty in support of this commitment.

OMSA facilitates minority student involvement in the total campus experience from the African American Scholars Program to the Student Government Association. The office also serves as an advocate group for minority students' concerns and interests. Another service is the coordination of certain University-wide programs such as Black History Month. OMSA provides individual and group counseling and advice to groups such as the Black Student Alliance, the Black Caucus, the Latino Student Alliance and the Intercultural Council.

OMSA also advises groups and individuals seeking improved understanding of races and cultures represented at VCU. In this way, the office seeks to supplement the opportunities for student growth and development at the University.

All students are urged to visit the Office of Minority Student Affairs located on the ground floor of Sitterding House at 901 Floyd Avenue, P.O. Box 843017, Richmond VA 23284-3017; (804) 828-6672.

Student Academic Support Services, MCV Campus

Donald G. Roebuck

Director

This is a personal service, located administratively under the Office of the Vice President for Health Sciences, designed to help individuals find ways to deal with the demands imposed by the health sciences curriculums and to help them become effective and efficient learners. Students meet with an academic skills counselor for an assessment of their learning needs. The counselor will then offer suggestions and strategies for dealing with their concerns.

SASS activities include counseling for academic self-concept issues; anxiety reduction; and learning strategies such as analyzing and organizing information, study methods, time management, test taking skills and writing skills. Limited screening for learning disabilities and attention deficits is available. Students are referred to other sources for formal evaluation if disabilities are suspected.

Services for students with disabilities for the MCV Campus are provided by this office. For further information, refer to "Services for Student with Disabilities."

The SASS office is located in the VMI Building, 1000 East Marshall Street, Room 301, P.O. Box 980124, Richmond VA 23298-0124; (804) 828-9782 or (804) 828-4608 TDD.

Services for Students with Disabilities

Virginia Commonwealth University is committed to providing students with disabilities an equal opportunity to benefit from all programs, services and activities. VCU complies with the requirements of the *Americans with Disabilities Act of 1990* and the *Rehabilitation Act of 1973*.

The University does not discriminate against qualified students with disabilities in admissions or program

accessibility. Offices of Services for Students with Disabilities determine appropriate academic adjustments such as program and exam modifications, classroom accommodations and auxiliary aids. Students with disabilities are responsible for self-identification prior to requesting services and may do so at any time by contacting their campus coordinator and presenting documentation.

Academic Campus

Dr. Shyla Ipsen

Coordinator

The Office of Services for Students with Disabilities, Academic Campus, is located in the Education Annex, 109 North Harrison Street, P.O. Box 842500, Richmond, VA 23284-2500. Telephone (804) 828-ABLE (V/TDD), fax (804) 828-1944 or e-mail sipsen@saturn.vcu.edu with any questions or concerns.

MCV Campus

Donald G. Roebuck

Coordinator

The Office of Services for Students with Disabilities, MCV Campus, is located in the VMI Building, 1000 East Marshall Street, Room 301, P.O. Box 980124, Richmond, VA 23298-0124. Call (804) 828-9782 or (804) 828-4608 TDD, fax (804) 828-4609, or e-mail dgroebuc@vcu.edu with any questions or concerns.

University Resources and Services

Centered in an urban environment, Virginia Commonwealth University is enveloped in the growth and progress of its community. It must develop and maintain new, innovative programs for its students, faculty, and staff in order to promote and service their everyday lives. VCU has established a wide range of resources and services to assist the University community in their academic endeavors. These resources and services are housed in state-of-the-art facilities that support computer resources, libraries, bookstores, a technology store, mail, food and printing services, parking and transportation, recreational sports, and intercollegiate athletics. All of these services are active upon the improvement of the academic environment in which VCU and its community strive to achieve excellence.

Business Services

Diane Reynolds
Interim Director

VCU Business Services provides support for numerous auxiliary operations in order to maintain a healthy and growing academic environment. Consisting of food, mail, and printing services, parking and transportation, and retail stores, Business Services oversees the daily activities that keep the University functioning in an organized manner. These services offer various meal plans, parking and shuttle programs, intercampus and U.S. mail services, printing and copying services, and computer and academic supplies as well as other retail novelties in order to bring convenience to the lives of its students, faculty and staff. For further information about the various services, visit the Business Services Web site at <http://www.bsv.vcu.edu>.

Food Services

Jean Clark
Manager

Undergraduate students living in University residence halls must participate in one of the board plans offered by VCU unless they are living in self-sufficient apartment units with kitchens. Students residing off campus also are encouraged to participate in the board plan.

VCU offers a number of different board plans ranging from the traditional 19 meals per week to the more flexible 10 meals per week plans. See Part III of this *Bulletin* for additional information.

Mail Services

Daniel Young
Business Manager

The United States Postal Service (USPS) provides self-service postal vending machines in the lobby of the VMI Mail Center at 1000 East Marshall Street on the MCV Campus and in the University Student Commons at 907 Floyd Avenue on the Academic Campus. Students can mail packages through the USPS from the Student Commons Postal Center. A full service Post Office located at 8th and East Marshall Streets is available for MCV Campus students.

All students living in residential housing have dormitory mailboxes. The address format is important for expedited mail delivery and should not be altered from the examples that follow.

Cabaniss Hall
Student's Name
(Room #) Cabaniss Hall
615 N 8th Street
Richmond VA 23298-8000

Bear, McRae, Rudd, or Warner Hall
Student's Name
(Room #) Dorm Name (Bear, McRae, Rudd, Warner)
600 N 10th Street
Richmond VA 23298-7000

Gladding Residence Center
Student's Name
(Room #) Gladding Res Ctr
711 W Main Street
Richmond VA 23220-5500

Johnson Hall
Student's Name
(Room #) Johnson Hall
801 W Franklin Street
Richmond VA 23220-4105

Rhoads Hall
Student's Name
(Room #) Rhoads Hall
710 W Franklin Street
Richmond VA 23220-4101

Parking and Transportation Services

Melanie Johnson
Manager

University Parking and Transportation Services has offices conveniently located on both campuses. Office hours are 8:00 A.M. - 4:30 P.M., Monday through Friday.

The Student Parking Program offers three subscriptions to fulfill the needs of VCU's diverse student population. Commuter student parking subscriptions provide guaranteed parking. Most facilities offer shuttle service and on-site dedicated security. Evening commuter students may purchase a discounted decal allowing parking in unrestricted facilities weekdays after 3:30 P.M. University Housing students may purchase convenient deck parking, which features 24-hour security coverage.

Parking decals are not required for parking in unrestricted University facilities on weekends and on University-observed holidays.

For commonly requested information on parking and transportation related topics, please call (804) VCU-PARK (828-7275). Automated bulletin board information is available 24 hours per day, seven days per week. To speak with a customer service specialist, please call (804) 828-0501 between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday.

Printing Services

Daniel Young

Business Manager

Printing Services provides high quality offset printing and reproduction services to faculty, staff and students. Printing Services, through a university contractual relationship currently provided with Xerox Business Services, can assist with preparation, copying, duplicating, printing and distribution and delivery of documents.

School of Business Copy Center

1015 Floyd Avenue, Room 1122, (804) 828-7207
Monday - Friday 8:00 A.M. - 5:00 P.M.

Ginter House Copy Center

901 West Franklin Street, Room B8, (804) 828-1366
Monday - Thursday 8:00 A.M. - 7:00 P.M.
Friday 8:00 A.M. - 5:00 P.M.

Hunton Hall Copy Center

Campus Room at MCV
323 North 12th Street, (804) 828-9654
Monday - Friday 8:00 A.M. - 5:00 P.M.

Printing Services also maintains coin/*VCU OneCard*-operated copiers on the Academic Campus. Two copy machines are located in the School of Business first floor vending area and one machine located near the postal center in the Student Commons.

Retail Stores

Dan McDonald

Business Manager

The **VCU Bookstores** provide textbooks and other related materials required of University students. The Academic Campus Bookstore maintains a large stock of used books. The Academic Campus and MCV Campus Bookstores also carry an extensive line of study aids, reference materials, general books, and magazines.

Additionally, the bookstores offer a full line of art and office supplies, lab apparel, calculators, greeting cards, candies, snack items, and a large assortment of licensed insignia items, including gifts, furniture, and apparel. The MCV Campus Bookstore stocks an extensive line of medical instruments.

The VCU Bookstores accept cash, VISA, Discover, MasterCard, American Express and the *VCU OneCard*. The stores accept personal in-state checks, and out-of-state checks are accepted during rush periods.

For refunds or exchanges, the customer must present a valid cash register receipt. Textbooks may be returned for a refund or exchange through the third week of regular classes and must be in absolutely new, unmarked condition. After the third week of classes, new textbooks in fresh condition may be returned within two days of purchase.

Academic Campus Bookstore

Hibbs Building
900 Park Avenue
(804) 828-1678, toll-free (800) 489-3638

Regular Hours:

Monday - Thursday	8:00 A.M. - 7:30 P.M.
Friday	8:00 A.M. - 4:30 P.M.
Saturday	11:00 A.M. - 3:00 P.M.

Extended Rush Hours:

Monday - Thursday	8:00 A.M. - 9:00 P.M.
Friday	8:00 A.M. - 4:30 P.M.
Saturday	10:00 A.M. - 3:00 P.M.

Wholesale book buy-back daily from 9:00 A.M. - 4:00 P.M.

MCV Campus Bookstore

601 North 10th Street (in the N Parking Deck)
(804) 828-0336, toll-free (800) 865-2777

Monday - Friday	7:30 A.M. - 5:30 P.M.
Saturday	10:00 A.M. - 2:00 P.M.

Wholesale book buy-back daily from 9:00 A.M. - 4:00 P.M.

The **technology store**, called online@VCU, is dedicated to providing high quality, competitively priced computer hardware, software and supplies. Many of the computer products can only be sold at educational discounts to currently enrolled or employed students, faculty or staff. The sales staff can suggest computer product bundles that include hardware, software and peripherals to meet the needs of a particular field of study.

online@VCU accepts cash, Visa, Discover, MasterCard, the *VCU OneCard* and personal checks. The store can also assist in arranging loan agreements.

online@VCU

University Student Commons
907 Floyd Avenue
(804) 828-7295

Monday - Thursday	9:00 A.M. - 7:00 P.M.
Friday	9:00 A.M. - 5:00 P.M.
Saturday	11:00 A.M. - 3:00 P.M.

Office for Information Technology

John D. Dayhoff

Vice Provost

The Office for Information Technology (OIT) was created in 1994 in response to a VCU strategic planning directive. Under the leadership of the Vice Provost for Information Technology, OIT is committed to fostering an environment which facilitates the use of information technology and library resources to support the learning, teaching, research, health care, and public service missions of the University. Four organizational units provide technological infrastructure, university-wide user services, and information resources in support of institutional operations and activities.

Administrative Systems

Mark Willis

Executive Director

Administrative Systems is responsible for operating, maintaining and enhancing the University's student, financial and human resources information systems. VCU is currently replacing its student information system. Operations will migrate to the new system by Fall 1998.

In conjunction with the systems upgrades, Administrative Systems is installing and enhancing information kiosks, World Wide Web technology and interactive voice response systems to make it easier for students, faculty and staff to access information and conduct routine business transactions with the University. Development of these access technologies, as well as reengineered administrative processes, is designed to ensure more efficient and user-focused administrative services to the University community.

Administrative Systems is also developing Lotus Notes as a "groupware" application for selected administrative and academic units. Notes will provide a common base for e-mail, calendaring, document and data base sharing and collaboration, workflow improvement, electronic forms and mobile computing. It is being implemented to improve communications and to move toward a "paperless" workplace.

Year 2000 compliance efforts are well underway for the University's mission-critical technology assets. The Year 2000 project planning and organization has been done within the Office for Information Technology, and needs to be extended to executive management sponsorship and oversight, and involve the individual schools and departments. A review of the University and MCVH Authority Year 2000 Project is currently being conducted by the Internal Audit Department at the request of the Board of Visitors.

Information Resources and Media

Phyllis Self

Executive Director

Information Resources and Media provides a full range of media services in support of instruction, research, patient care and public relations at VCU. Each

service is provided with a commitment to maintaining high professional standards and using state-of-the-art resources to keep VCU on the cutting edge of media technology.

In addition to services listed below, Information Resources and Media staff coordinate the creation of VCU's Digital Library Project (LEONARDO) and management of VCU's World Wide Web site at <http://www.vcu.edu>.

The **Instructional Development Center** (IDC) supports faculty use of instructional technology through consulting, training, project development and creation of teaching media.

IDC works with individual faculty and with academic units in the planning and development of computer-based instructional projects, using both network solutions such as the World Wide Web and stand-alone authoring environments such as Authorware. Of particular interest are projects which 1) can be integrated into the VCU Digital Library, 2) use innovative technologies, 3) are of strategic importance to the University, or 4) can be leveraged into template development.

Given its limited staff, IDC has striven to maximize the assistance it can offer by creating tools to enable faculty themselves to create computer-based learning materials. One such tool is "Web Course in a Box," which allows faculty quickly and easily to create Web pages for classes.

IDC is committed to helping faculty in a variety of ways to become knowledgeable about innovations in instructional technology and in finding effective ways to use technology to enhance learning. Each semester a series of seminars is hosted by IDC; summer and winter institutes offer longer-term learning opportunities. IDC's Web site (<http://www.vcu.edu/mdcweb/>) features a "Self-Study Lab" with information on learning resources as well as locally created demos and tutorials.

IDC staff endeavor to stay current in the fast-changing area of instructional technology, examining leading-edge technologies which hold promise for applications in higher education. IDC maintains a series of Web pages on "emerging technologies" which highlight new developments with examples and links to additional sources of information.

Media Production Services (MPS) provides a full range of media production services. Service and Price Guides are available upon request.

MPS graphic designers, multimedia designers and medical illustrators provide a variety of services including:

- publication design (brochures, booklets, and posters);
- multimedia and World-Wide Web graphics design;
- medical, scientific, and instrument illustrations;
- editorial illustrations and cartoons;
- portable exhibits;
- electronic and slide presentation design; and
- charts, graphs, and diagrams.

MPS produces visual presentation media from a variety of graphics and presentation software for Macintosh and IBM-compatible computers. Faculty and staff can develop their own presentation media using personal

computers and software, then bring their files to MPS to be made into high-resolution 35mm slides, color prints, and color transparencies.

MPS photographers provide print, slide, and digital still image production in the studio and on-location. Biomedical photographers respond immediately to requests from MCV Hospitals and Clinics. Over 300 stock slides of popular VCU images including aerial views of both campuses are available. Services include:

- biomedical photography – photography for emergency medical cases is available 24 hours a day by calling MCV Hospital telepage at 828-0951;
- digital photography;
- location photography for publication and promotion;
- portrait, group, and application photographs;
- product and instrument photography;
- copy photography from books and sheets;
- film processing; and
- slide duplication.

MPS provides broadcast-quality programs for instructional, informational, and documentary uses. Location and studio services are offered, along with a computer-assisted, post-production facility and digital encoding services. For more information call 828-3401 or visit the MPS Web site at <http://views.vcu.edu/mps/>.

Media Support Services (MSS) provides a comprehensive audio visual and television distribution service.

Many VCU classrooms are equipped with computer and video projectors, computer network and phone lines, VCR's, and centralized controls for the media equipment in the room. MSS staff are available for operational assistance and instructional design.

MSS engineers provide system design, consultation, and installation along with a full-service maintenance and repair facility. For more information call 828-1098 or visit the Web site at <http://www.vcu.edu/vcu/oit/mss/>.

Audio visual equipment may be borrowed from MSS in Cabell Library, room B-40, on the Academic Campus and in Sanger Hall, room B1-018, and the MCV Hospital Library in Main Hospital, room 9-117, on the MCV Campus. Equipment includes computer projectors, LCD panels, laptop computers, 35mm slide and overhead projectors, VCR's, and camcorders. Student use of equipment requires faculty authorization. Please submit requests for AV equipment 24 hours in advance.

MSS staff coordinate VCU teleconference downlinks and satellite up-links, identify distance learning technology options, and schedule production facilities, satellite time, and technical support for distance learning classes and conferences.

MSS video distribution systems provide videotape, satellite, and ITFS and off-air reception recording and distribution. Videotape and audiotape duplication services are also provided.

University Computing and Communications Services

Allyn Chase
Executive Director

University Computing and Communications Services (UCCS) is composed of the University Computing Services - Academic Campus, University Computing Services - MCV Campus, University Computer Center, Telecommunications Services, Network Services and the *VCU OneCard Office*.

Basic services from these centers include consulting help in the use of all University computing resources, teaching short courses, advice on acquisition of computer systems, operation of local computer facilities and data networks, optical scanning for test grading, faculty evaluation and other surveys, Web management, and microcomputer software site licensing. A number of other services are provided to support micro, mini, and mainframe computers.

The **University Computer Center (UCC)** provides computing services on IBM OS/390 (MVS) and RS/6000 SP computers to students, faculty and staff for administrative and academic functions. Services provided include large data storage capacity, mainframe processing power, extensive networking facilities, batch processing, and on-line systems. The on-line systems include TSO (a versatile programming tool) and CICS (provides access to hundreds of application programs used extensively throughout the university). Please see the UCC's Web page at <http://www.vcu.edu/vcu/ucc/> for additional information.

University Computing Services - Academic Campus (UCS-AC) operates several UNIX timesharing computer systems and several public-access computer facilities which are strategically located around the campus: in the Cabell Library, in the School of Business Building, and in the School of Education. In addition, a number of departments and schools maintain their own microcomputer labs around the campus.

Remote access is available through the international education and research network known as the Internet, and through dialup facilities.

A variety of software packages are available for use with the UNIX computers. The more popular packages include WordPerfect, SPSS, SAS, Kermit, Telnet/FTP and many programming languages. Supported applications are in the areas of word processing, editing, text processing, text analysis, microcomputer communications, statistics, spreadsheet, and data base. Also available are widely used electronic mail and access to the Internet which provide entry to information and library resources throughout the world.

Application forms for access to the UNIX systems as well as for accounts on the IBM Mainframes (at the University Computer Center) and UNIX systems (at Computing Services - MCV Campus) are available from the (UCS-AC) Customer Service Window, Cabell B-9.

UCS-AC also provides short courses in most of the popular personal computer applications; e.g., Microsoft Office, WordPerfect, etc. Personal computing desktop application support is available via on-site assistance and a call-in Help Line (828-2227). Windows 95, Windows for Workgroups and MAC computers and applications are supported.

For more information, see the Web page at <http://www.vcu.edu/vcu/ucsac/>.

University Computing Services - MCV Campus (UCS-MCV) manages a VAXcluster (VMS) and UNIX

servers, which provide interactive computing to public and private workstations around the MCV Campus. UNIX servers, including 2 RS/6000 AIX nodes of the IBM SP and an SGI PowerChallenge L, are replacing the VAXcluster. These machines provide a rich variety of software packages, including SAS, DB2, SPSS, SYBYL, SPICE, IMSL, NAG, GCG, and many computer languages. Supported software applications include statistical packages, simulations, data base, molecular modeling, forms management, and word and text processing. In addition, these machines are used for connectivity to the Internet, for Web serving, and for information dissemination for the academic community, as well as for e-mail. Assistance with e-mail accounts on these machines can be obtained by contacting a consultant by e-mail at consultant@gems.vcu.edu.

A number of public-access IBM PC compatible and Macintosh microcomputer systems and SGI/Indigo2 UNIX workstations are available in Sanger Hall, Room B3-012. External devices such as optical page scanners, slide-makers, plotters, and digitizers are connected to these microcomputers. In addition, many departments and schools maintain their own microcomputer labs.

The campus-wide Ethernet's high-speed networks provide access to central (VAX, IBM RS/6000, SGI, and IBM Mainframe) and departmental computing resources. Character-based dial-up access is also provided. Application forms for access to the VAX systems, the IBM RS/6000s, and the SGIs, as well as for accounts on the IBM Mainframes (at the University Computer Center) and the systems operated by UCS-AC are available from UCS-MCV.

For additional information, see the Web page at <http://griffin.vcu.edu/ucsmcv/>.

Network Services. All University and departmental servers and networked workstations are linked together by the University network, VCUnet. VCUnet extends into all major buildings on both the Academic and MCV Campuses as well as the University Computing Center. The primary protocols supported are TCP/IP and IPX. VCUnet provides access to the Internet, Network Virginia, BITNET, and VERnet. VCUnet is also actively participating in the Internet2 project. Contact and connection request information can be found at <http://www.vcu.edu/vcu/ns/>.

Telecommunications Services provides voice communications for the Academic and MCV Campuses – faculty, staff and dormitory students – and for MCV Hospitals. Services include phone, fax and modem installation and removal, long distance service, voice mail, calling cards, equipment repair, directory publication and systems consultation. Administrative customers may call 828-4331 for service. Dormitory students should call 692-6000.

VCU OneCard. To utilize university resources and services, students should always carry their *VCU OneCard* with them and be ready to show it to any authorized University official who requests identification. The *OneCard* is required for numerous University services such as borrowing library books and riding the shuttle bus. After registering for classes, students may obtain their *OneCard* at the *VCU OneCard* Offices on either campus.

Beyond being an identification card, the *OneCard* has additional functions. For meal plan customers, the *OneCard* is presented for entrance into the dining facilities. The debit features provide students with a convenient way to make food and other purchases without carrying cash. The *OneCard* vending program enables students to make copies, purchase Pepsi and other vending products, and use the laundry facilities in the residence halls. The card also features a long-distance calling card option through the Campus MCI program.

Any student who loses his or her *VCU OneCard* should report its loss immediately to the *OneCard* Office and apply for a replacement card. A replacement fee is charged for any card which is lost or damaged. When stray *OneCards* are turned into the *OneCard* Office, every effort is made to contact the cardholder.

For more information on *VCU OneCard* programs, contact the *VCU OneCard* Office on the Academic Campus at James Branch Cabell Library, Room B-46, (804) 828-8385 or on the MCV Campus at Tompkins McCaw Library, Room 1-025, (804) 828-2545 or check out their home page at <http://www.vcu.edu/onecard/>.

University Library Services

Barbara Ford

Executive Director

University Library Services (ULS) is a vibrant community where ideas are generated, engaged, and shared. It is a dynamic center of culture and knowledge, serving as a conduit for recorded information in all its forms.

ULS administers the major research libraries on both campuses and provides numerous electronic resources, federal and state documents, patents, and a wide variety of microform and media resources.

The combined collections in James Branch Cabell Library on the Academic Campus and Tompkins-McCaw Library on the MCV Campus total more than 1.23 million volumes. Cabell Library's growing collections support the programs of the Academic Campus. The library houses more than 940,000 volumes and 6,900 journal titles. The comprehensive collections of Tompkins-McCaw Library support the University's teaching and research needs in the health sciences and contain more than 288,000 volumes and 2,800 journal titles. Tompkins-McCaw Library is a designated resource library for the southeastern states in the National Network of Libraries of Medicine.

The most recent issues of the journal and newspaper titles in the collection are shelved on the second floor of Cabell Library and in the basement of Tompkins-McCaw Library. Bound volumes of the journals are shelved on the second floor of Cabell Library and throughout the stacks at Tompkins-McCaw Library.

Cabell Library, a selective depository for U.S. government documents and a state depository for the Commonwealth of Virginia, also is the only United States Patent and Trademark Depository Library in Virginia. The combined Government Documents collections include items available in print, microforms and electronic formats.

ULS is extensively automated, with almost 900 data bases available for searching and more than 100 public

access workstations. A large collection of microforms and audio-visual materials round out the libraries' collections.

Both libraries provide an assortment of services, including reference assistance from professional librarians, library orientation tours and bibliographic instruction, computer-assisted literature searches, brown bag lunches and seminars on Internet navigational tools and resources, self-service photocopiers, and microform reader-printers.

The online catalog serves as the gateway to both print, non-print, and electronic resources. Electronic data bases, and a broad array of CD-ROMs covering all disciplines, constitute the backbone of ULS' electronic resources. Increasingly, many of the data bases are available through the Web. The catalog links both libraries and enables patrons to determine the status of library materials. Except for the basement of Cabell Library, computer workstations are located on all floors of both libraries.

Through interlibrary loan, students may borrow books and obtain photocopies of articles not owned by ULS from the collections of academic and public libraries throughout the country. VCU students also may borrow specific books from other Richmond academic libraries by inquiring at the Cabell Library Reference Desk and Tompkins-McCaw Library Service Desk for a special borrower's pass.

ULS document delivery, a fee-based service to retrieve, photocopy, and deliver articles owned by ULS, is available to VCU students, faculty and staff.

Media resources, located in room 301 of Cabell Library and on the second floor of Tompkins-McCaw Library, consist of non-print resources, including cassette tapes, compact discs, computer software, models, slides, and video and laser discs. Media Resource Services at Cabell Library also houses music scores. Additionally, films and videos from the Richmond Area Library Cooperative Film/Video Library Cooperative are available to VCU faculty.

There are many services for persons with disabilities. Cabell Library has a wheelchair ramp to enter the building on the first floor through automatic doors. Accessible restrooms are in the basement and second floor levels, and elevators provide access to all floors. Special audio and visual equipment is available to aid in using library materials, including the Kurzweil "Reading Edge," a synthesized-voice reading machine; the Voyager/Visualtek Reader for enlarging printed text; a large-print microfiche reader; and a personal computer with screen magnification and synthesized voice screen reader. Staff at the Reference Desk can provide special research assistance and orientations by appointment. ULS will waive the fee for document delivery service and provide assistance with retrieving and photocopying materials from the collection within 48 hours of the request.

Tompkins-McCaw Library has a wheelchair ramp with a monitored entrance. Accessible restrooms are available on the first floor. Elevators provide access to all floors. Specialized equipment includes a personal computer with a braille printer, software for screen magnification and scanning, and synthesized voice for screen reading. A Voyager/Visualtek Reader and large-print microfiche reader also are available. Staff at the docu-

ment delivery service will waive the fee and provide assistance with retrieving and photocopying materials from the collection within 48 hours of the request for the physically challenged patron.

Most of ULS' reprographics and printing equipment is *VCU OneCard*-compatible. The *VCU OneCard* also can be used for checking out library materials.

ULS is a member of the Center for Research Libraries, the Richmond Area Library Cooperative, the Association of Southeastern Research Libraries, the Richmond Area Film/Video Cooperative, the Southeastern/Atlantic Regional Medical Library Services, and the Virtual Library of Virginia (VIVA) initiative (<http://www.viva.lib.va.us>).

ULS strives for excellence in all of these endeavors, keeping uppermost in mind at all times the importance of the highest quality service to the students, faculty, and staff of the University.

For more information about ULS, please visit the Web site at <http://www.library.vcu.edu>.

Intercollegiate Athletics

Dr. Richard Sander

Athletic Director

Mission

The mission of the VCU Athletic Department is to complement and supplement the total educational program of the institution. The Athletic Department must provide positive learning experiences for all students and give each individual the opportunity to share in personal and group success. VCU Athletics will provide students involvement in an activity that helps to develop unity by encouraging a common quest for all students, alumni, staff and friends of the University. The athletic program is committed to enriching the mental and physical capabilities of its student-athletes while developing and building a respected program that is competitive on a national level in selected sports. The department also guarantees a quality program in the other sports that will create a basis for pride among the varied constituencies of the University.

Program and Facilities

With new athletic facilities and upgraded programs, the intercollegiate athletic program at VCU continues to grow. More than 250 student-athletes participate in the 16 athletic programs sponsored by the University, and 2 new multimillion dollar facilities are under development for the 1998 school year.

The most significant addition to the department's facilities is the Stuart C. Siegel Convocation and Recreation Center, scheduled for completion by the 1998 fall semester. The multipurpose facility will be located on the northwest corner of West Broad and Harrison Streets and will consist of two components. The first will be a recreational component consisting of over 34,000 square feet of space suitable for a variety of activities, including weight and fitness training, basketball, volleyball, and aerobics, as well as locker rooms, showers,

equipment, a lounge, and food service. The second will be an events center with over 155,000 square feet of multi-purpose space, including six basketball courts for daily recreational use and practice for athletes, permanent and retractable seating, locker rooms, study areas, team lounges, concessions, and administrative office space.

In addition to the Seigel Center, VCU is a member of a regional partnership leading the development of a Track and Soccer Complex to be built adjacent to the Diamond and scheduled to open in fall of 1998. The complex will feature a grass soccer field and an eight-lane synthetic track. VCU will own and manage the facility. The Thalhimer Tennis Center, with its air-supported roof, and the Cary Street Field's artificial turf surface provide our student-athletes with some of the most modern athletic facilities in the state.

VCU's teams compete in the NCAA's Division I, the highest level of intercollegiate competition. Athletic teams for men include basketball, baseball, cross country, golf, soccer, tennis, and indoor and outdoor track and field. Women's teams include basketball, cross country, field hockey, soccer, tennis, volleyball, and indoor and outdoor track and field.

All full-time undergraduate students enrolled at VCU are eligible to compete, subject to the rules and regulations governing intercollegiate competition. Students interested in a specific sport should contact the coach through the Department of Athletics, Franklin Street Gymnasium, 819 West Franklin Street, P.O. Box 842003, Richmond, VA 23284-2003, (804) 828-4000.

Office of Student-Athlete Advising

All students have two advisors, one within the Office of Student-Athlete Advising and one within the student-athlete's major. Each team is assigned an Office of Student-Athlete Advising adviser who will coordinate academic and personal advising for the team. The adviser will assist the student-athlete in meeting requirements for academic progress and athletic eligibility consistent with VCU's policies and NCAA rules and regulations. Services offered to student-athletes include tutorial assistance, study skills instruction, academic monitoring, and academic planning. The computer lab in the Office of Student-Athlete Advising is an additional resource for students on varsity teams. All VCU student-athletes participate in the NCAA Life Skills program.

Recreational Sports

A variety of facilities, services, and programs provided for the VCU community are coordinated by the Recreational Sports staff. For information, see "Recreational Sports" in Part IV of this *Bulletin* or visit the Web site at <http://views.vcu.edu/recsports/>.

Services for Students with Disabilities

For information on services provided for students with disabilities and office locations, see Part IV.

VI

P A R T

Regulations and General Degree Requirements

Advising Program

Students are responsible for knowing and fulfilling all general and specific degree requirements as described in this section.

Individual student advising is an integral part of the VCU student's academic program. Each degree-seeking student is assigned a faculty adviser who is available for academic and career advising. Special (nondegree-seeking students) should contact the Office of Community and International Programs, 827 West Franklin Street. Students also are encouraged to seek advising, depending on intended major, from the appropriate office listed in Part II of this *Bulletin*.

Additional assistance for all students is available from the Counseling Center and the University Career Center.

Address

Every VCU student is responsible for keeping a current mailing address on file with the Office of Records and Registration.

Mailings returned to this office by the U.S. Post Office because of an incorrect address may result in a registration hold on a student's record until the correct address is provided.

Attendance Regulations

The instructional program at VCU is based upon a series of class meetings involving lectures, discussions, field experiences, special readings, and reporting assignments. Therefore, it is important for each student to be in attendance on a regular basis. A student who misses a class session is responsible for completing all material covered or assignments made during the absence.

Instructors must clearly inform the student in writing of the attendance requirements for each course and the corresponding consequences of poor attendance. Though the attendance requirements may vary widely from one course to another, students must abide by these requirements. Students cannot enroll in two courses that meet concurrently without written approval from the chair of each department involved.

Students having attendance problems should contact the instructor to explain the reasons for nonattendance, and to discuss the feasibility of continuing in the course. If the student has fallen so far behind that the successful completion of the course is impossible, the student

should withdraw from the course before the end of the first eight weeks of classes.

If the student continues to miss class and does not officially withdraw from the course, the instructor may withdraw the student for nonattendance with a mark of "W" before the end of the first eight weeks of classes, or may assign an academic grade. Withdrawals are not permitted after the end of the first eight weeks of classes. For classes that do not conform to the semester calendar, the final withdrawal date occurs when one-half of the course has been completed. Withdrawal dates for summer session classes are published in the *Summer Schedule of Classes*.

Religious Observances

It is the policy of VCU to accord students, on an individual basis, the opportunity to observe their traditional religious holidays. Students desiring to observe a religious holiday of special importance must provide advance written notification to each instructor by the end of the second week of classes. Instructors are encouraged to avoid scheduling on these dates one-time only activities which cannot be replicated. Faculty members are expected to make reasonable accommodations to students who are absent because of religious observance through such strategies as providing alternative assignments or examinations or granting permission for audio or video recordings and the like.

Student Conduct in the Classroom

The instructional program at VCU is based upon the premise that students enrolled in a class are entitled to receive instruction free from interference by other students. Accordingly, in classrooms, laboratories, studies, and other learning areas, students are expected to conduct themselves in an orderly and cooperative manner so that the faculty member can proceed with customary instruction. Faculty members (including graduate teaching assistants) may set reasonable standards for classroom behavior in order to serve these objectives. If a student believes that the behavior of another student is disruptive, the instructor should be informed.

If a faculty member believes that a student's behavior is disrupting the class and interfering with normal instruction, the faculty member may direct the student to leave the class for the remainder of the class period. In such circumstances, the faculty member is the sole judge that the student's behavior is sufficiently disruptive to

warrant a temporary dismissal from the classroom. Disruptive behavior on the part of the student may result in the filing of formal charges under the University's *Rules and Procedures* document.

Change of Major

Students who wish to change their majors must file a Change of Major Form. These forms are available at the Student Services Center in Founders Hall. The change of major becomes official after the Office of Records and Registration has received the form signed by the dean or chairperson of the appropriate school or department. A change of major should not occur for current semesters after the "add-drop" period.

Before initiating a change of major, students should carefully review the requirements and prerequisites of the program they wish to enter. In certain programs – including those in the Schools of the Arts, Business, Education, Mass Communications and nontraditional studies – a candidate must fulfill additional requirements before being accepted as a degree-seeking student.

Students currently enrolled in an MCV Campus program who wish to change to a curriculum on the Academic Campus must file a Change of Major Form. Such students are subject to the continuance policy of the Academic Campus after the major has been changed. Students currently enrolled in an MCV Campus program who wish to change to another MCV Campus curriculum must go through the admission process outlined in Part II of this *Bulletin*.

Credits previously earned at VCU or at another university, may or may not be applicable to the new major.

Classification of Students

Academic Programs

Full-time and part-time degree-seeking students, but not nondegree-seeking students, are classified by credits earned as follows:

Freshmen	1 to 23 credits
Sophomores	24 to 53 credits
Juniors	54 to 84 credits
Seniors	85 credits and more

Health Science Programs

Classification is determined by curriculum requirements for individual programs.

Continuous Enrollment

A student who does not attend VCU for 4 or more successive semesters including summer sessions, must submit an application for readmission to the Office of Admissions. This application must be filed before the suggested deadline date for submitting readmission applications for the semester in which the student wishes to return to VCU. For Health Science programs, breaks in enrollment must be approved by the department.

General Course Information

Course Numbering System

All schools and programs within VCU use the following course numbering system. All course numbers consist of three digits (XXX). The first digit relates to the course level as follows:

A. 0XX Noncredit Courses

Such courses are offered for students to make up deficiencies in previous training or to improve certain basic skills prior to full-time enrollment in undergraduate credit courses.

B. 1XX and 2XX Undergraduate, Lower Level

Courses with these numbers are offered primarily for undergraduate students and may not be used for graduate credit, although graduate students may be required to register for courses at this level to gain a necessary foundation for other course work.

C. 3XX and 4XX Undergraduate, Upper Level

Courses offered for advanced undergraduates and usually constitute the major portion of specific program work leading to the baccalaureate degree. On occasion, students will be advised by their graduate advisers to enroll in a 4XX course.

D. 5XX Introductory Graduate Courses

Graduate students enroll for credit in these courses through the normal graduate advising system. Departments may limit the number of 500-level courses applicable to a graduate degree program. Advanced undergraduates may enroll in these courses for credit with consent of the offering department. Credit is applicable toward only one degree.

First year, First Professional (Medicine and Dentistry)

Courses normally open to students enroll in the MD and DDS programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

E. 6XX, 7XX, and 8XX Graduate Courses

Graduate students enroll for credit in these courses through the normal graduate advising system.

6XX Second Year, First Professional (Medicine, Dentistry, and Pharmacy)

Courses normally open only to students enrolled in the MD, DDS, and PharmD programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

7XX Third and Fourth Year, First Professional (Medicine, Dentistry, and Pharmacy)

Courses normally open only to students enrolled in the MD, DDS, and PharmD programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

Course Interpretation

A single number listing for a course, such as BUS 121, indicates it is a one-semester course and may be offered each semester or only one semester each year.

Courses listed with a double number, such as HIS 201, 202 and designated as semester courses, consist of two one-semester courses either of which may be taken without the other.

Courses listed with a double number, such as ENG 101-102 and designated as a continuous course, consist of two one-semester courses, the first of which can be taken without the second, but the second of which cannot be taken without the successful completion of the first.

The University reserves the right to withdraw any course or program.

Course Abbreviations

Course abbreviations will change at the end of Fall 1998. Current and new abbreviations have been included to assist students in course registration for Spring 1999.

Current New

Abbrev.	Abbrev.	Description	Abbrev.	Description
AAS	AFAM	African-American Studies	ELP	English Language Program
ADE	ADLT	Adult Education	EMO	Emotional Disturbance
AEN	ARTE	Art Education	END	Endodontics
AFO	ARTF	Art Foundation	ENE	English/English Education
AHP	ALHP	Allied Health Professions	ENG	English
AMS	AMST	American Studies	ENS	Environmental Studies
ANA	ANAT	Anatomy	EUC	European Cultures
ANT	ANTH	Anthropology	FDE	Fashion Design and Merchandising
APM	APPM	Applied Music	FEL	Fellowship
ARH	ARTH	Art History	FLA	Foreign Languages
ART	ARTS	Arts	FLT	Foreign Literature in English Translation
ASE	ADMS	Administration and Supervision	FRE	French
BIC	BIOC	Biochemistry and Molecular Biophysics	FTM	Fast Track MBA
BIO	BIOL	Biology	GDE	Graduate Dental Education
BIS	BIOS	Biostatistics	GED	General Dentistry
BME	EGRB	Biomedical Engineering	GEN	Human Genetics
BUS		Business	GEO	Geography
BUS	ACCT	Accounting	GEP	General Practice
BUS	FIRE	Finance, Insurance and Real Estate	GER	German
BUS	INFO	Information Systems	GME	Graduate Medical Education
BUS	MGMT	Management	GRS	Graduate Studies
BUS	MRBL	Marketing and Business Law	GTY	Gerontology
CDE	CARD	Communication Arts and Design	HAD	Health Administration
CHE	CHEM	Chemistry	HAE	Health Administration/Executive
CHI	CHIN	Chinese	HCM	Health Care Management
CHS	HUSI	College of Humanities and Sciences	HED	Health Education
CIP	STUA	Study Abroad Programs	HIS	History
CLS	CLLS	Clinical Laboratory Sciences	HON	University Honors Program
CML	CMLI	Comparative Literature	HUS	Humanities and Sciences
COE	CLED	Counselor Education	IDE	Interior Design
COP	COOP	Cooperative Education	IDS	Interdisciplinary Developmental Disability Studies
CRA	CRAF	Crafts	INH	Industrial Hygiene
CRE	EGRC	Chemical Engineering	INT	International Studies
CRJ	CRJS	Criminal Justice	ITA	Italian
CRS	CLRS	Clinical Radiation Sciences	LAT	Latin
CSC	CMSC	Computer Science	LDS	Special Education-Learning Disabilities
DAN	DANC	Dance and Choreography	LIN	Linguistics
DEH	DENH	Dental Hygiene	LSK	Language Skills
DEN	DENS	Dental Special Topics	MAC	Mass Communications
EAS	ESCI	Earth Science	MAT	Mathematics
ECH	ECSE	Early Childhood Special Education	MCE	Mechanical Engineering
ECO	ECON	Economics	MED	Medicine
EDU		Education	MHT	Music History, Literature and Theory
EDU	EDUS	Educational Studies	MIC	Microbiology and Immunology
EDU	TEDU	Teacher Education	MIS	Military Science
EGR	ENGR	Engineering	MRT	Mental Retardation
ELE	EGRE	Electrical Engineering	MUC	Music Composition
			MUE	Music Education
			NEU	Neurosciences
			NSE	Domestic Exchange Program
			NUA	Nurse Anesthesia
			NUR	Nursing
			OCT	Occupational Therapy
			ORP	Oral Pathology
			ORS	Oral Surgery
			ORT	Orthodontics
			PAC	Patient Counseling
			PAD	Public Administration
			PAP	Painting and Printmaking
			PAT	Pathology
			PED	Pediatric Dentistry
			PER	Periodontics
			PHA	Pharmacy and Pharmaceutics
			PHC	Medicinal Chemistry
			PHE	Physical Education
			PHI	Philosophy
			PHT	Physical Therapy
			PHY	Physics
			PIO	Physiology
			PMC	Pharmacology and Toxicology
			PMH	Preventive Medicine and Community Health
			POR	Portuguese
			POS	Political Science
			PPA	Public Policy and Administration
			PRS	Prosthodontics
			PSY	Psychology

PTY	PHTO	Photography and Film
REA	READ	Reading
REC	RECR	Recreation
REH	RHAB	Rehabilitation Counseling
RSS	RDSS	Reading and Study Skills
RST	RELS	Religious Studies
RUS	RUSS	Russian
SCI	INSC	Interdisciplinary Science
SCU	SCPT	Sculpture
SLW	SLWK	Social Work
SOC	SOCY	Sociology
SPA	SPAN	Spanish
SPE	SPCH	Speech
SSC	SOCS	Social Sciences
STA	STAT	Statistics
SWD	SWKD	Social Work-Doctorate
THE	THEA	Theatre
UNS	UNVS	University Studies
USP	URSP	Urban Studies and Planning
VCU	VCU1	Academic Affairs
WST	WMNS	Women's Studies

Registration Policies

Student Load

Student load is the total number of credits for which a student is enrolled in any one semester. The semester credit is the quantitative unit by which courses are measured. A semester credit is defined as one hour per week of lecture/recitation or not less than two hours per week of laboratory work, field work, internship, or studio work throughout the semester. MAT 001, ENG 001, and ENG 002 are each equivalent to three semester hours, but none carries academic credit.

Full-Time and Part-Time Students

A student enrolled in 12 credits or more during any fall or spring semester is classified as full-time. A student enrolled in 11 credits or less during any semester is classified as part-time. Both full-time and part-time students may seek degrees at VCU. However, some curricula may require full-time status. For more information, see the "Categories of Student Enrollment" section in Part II of this *Bulletin*.

Overload

A degree-seeking undergraduate student may take no more than 19 credits per semester without special permission. This maximum load excludes holiday intersession courses. More than 19 credits per semester constitutes an overload. Health Science curricula requiring more than 19 credits per semester are exempt from this rule.

The student's adviser and academic dean may permit a student to attempt up to 21 credits per semester, but no student may attempt more than 21 credits in any one semester. An Overload Approval Form may be obtained from the Student Services Centers in Founders Hall and Sanger Hall.

Undergraduate special nondegree-seeking students may take no more than 11 credits per semester. Overloads for special nondegree-seeking students must be approved by the Academic Regulations Appeals Committee.

For information about credits earned concurrently at another institution, see the "Concurrent Registration" section.

Audit Registration

For information on registration for audit see the section under the headline "Mark of Audit."

Concurrent Registration

Students enrolled in degree programs need prior approval to take courses at other institutions to ensure credits earned concurrently at another institution are accepted for transfer at VCU. Before registration at the other institution, the student needs approval by his or her adviser, department chair, and academic dean. A *Request to Take Courses at Another Institution* form can be obtained from the Student Services Center, Office of Records and Registration or from the Office of the Dean.

Change in Registration

Once a student has registered for classes, changes in registration must be made according to the procedures listed below. Whenever a student makes any change in registration, the student should keep a copy of the new schedule as verification of the change. **Changes in registration may affect financial aid.** Students are advised to consult with a financial aid counselor before making any changes to their enrollment status. See Part III of this *Bulletin* for detailed information on financial aid.

Cancellation of Registration

To cancel registration a student must notify, in writing, the Office of Records and Registration before the end of the "Add-Drop" period, or drop all classes using the Telephone Registration System. Refunds are issued in accordance with procedures described under the Refunds section in Part III of this *Bulletin*. For readmission guidelines, consult Part II of this *Bulletin*.

Withdrawal from the University

Students enrolled in health science programs should refer to school guidelines. Withdrawal may affect continuation in health science curricula.

Students who withdraw from all classes during a semester must notify, in writing, the Office of Records and Registration before the end of the first eight weeks of classes, or if applicable, withdraw from all classes using the Telephone Registration System by the end of the first eight weeks of classes. Failure to notify the Office of Records and Registration of intention to withdraw from all classes, or to withdraw from all classes using the Telephone Registration System can result in the assignment of failing grades in all or some of the courses. The final withdrawal date for classes whose meeting dates do not conform with the semester calendar is the day when one-half of the course has been completed. Withdrawal forms are available at the Student

Service Centers in Founders Hall and Sanger Hall. Failure to complete this form may result in failing grades in all or some of the courses.

A mark of "W" for withdrawn will appear on the student's permanent academic record for all courses. Charges are assessed and adjusted according to the *University Refund Policy*. See "Refunds" in Part III of this *Bulletin*.

When extraordinary circumstances require that a student requests retroactive withdrawal after the final withdrawal date, the student must petition the Academic Regulations Appeals Committee for consideration of a waiver of this academic regulation. For further information, see the "Waiver of Academic Regulations, Academic Regulations Appeals Committee".

A student who withdraws from all courses during a semester may attend the following semester without submitting an application for readmission. **MCV Campus students should consult their program adviser prior to any withdrawals for academic or health-related reasons.**

A student who does not attend VCU for 4 or more successive semesters, including the summer, must submit an application for readmission to the Office of Admissions. This must be done before the suggested deadline date for submitting readmission applications for the semester in which the student wishes to return.

See also "Cancellation of Registration" section.

During the Add/Drop Period

Exact dates for add/drop periods before and during the first week of classes are listed in the *Schedule of Classes* booklet each semester. Changes in registration (drops, adds, changes from audit to credit) during the add/drop periods can be made by completing a Course Request Form and submitting it to the Student Service Centers in Founders Hall or Sanger Hall. Courses dropped during add/drop periods do not show on a student's permanent record.

After the Add/Drop Period

Students cannot add a course after the add/drop period, except under unusual circumstances and with the permission of the dean of the school offering the course. The calendar in the front of this *Bulletin* lists the date when add/drop ends.

Drops are not permitted after the add/drop period has ended. However, students may withdraw from classes in accordance with prescribed procedures. To officially withdraw from a class, a student must obtain and file the appropriate form with the Office of Records and Registration.

If a student stops attending a class and fails to withdraw, a failing grade is usually given for that course. Withdrawals become a part of the student's academic record with a mark of "W". In classes that do not conform to the normal semester calendar, the final withdrawal date is when one-half of the course is completed.

For further information see the "Withdrawal from the University" section. Students who withdraw from a course may be entitled to a refund. See "Refunds" in Part III of this *Bulletin*.

Grading and Marking System

Evaluation and Final Grade Reports

Students are encouraged to discuss their progress in courses with their instructors, especially before the withdrawal deadline.

University policy requires faculty to provide students with feedback about their academic performance before the semester or class withdrawal date. Although such feedback does not always take the form of a letter grade, grades do provide a clear indication of class progress.

Final grade reports are sent to students at the end of each semester. Grade reports are mailed to the official mailing address on file in the Office of Records and Registration. Students must submit in writing any change of address to the Office of Records and Registration, 827 West Franklin Street, PO Box 842520, Richmond, VA 23284-2520 or the Student Service Centers in Founders Hall or Sanger Hall.

Grades and Grade-Points

VCU course work is measured both in terms of quantity (semester hours of credit) and quality (grades). Grades are assigned according to a letter system. Each letter is assigned a grade-point value. These letter grades and their respective meaning and grade-point values follow:

Grade Letters and Meaning	Grade-Point Values per Semester Credit
A	4.0
B	3.0
C	2.0
D	1.0
F	0.0
AU = Audit	-
CO = Continued	-
CR = Credit	-
H = Honors	-
HP = High Pass	-
I = Incomplete	-
M = Marginal	-
NC = Administrative grade with no credit	-
NG = Administrative grade assigned when no grade is submitted by the instructor	-
P = Pass	-
PR = Progress	-
W = Withdrawn	-
RD = Repeated course; "D" grade excluded from cumulative GPA	-
RF = Repeated course; "F" grade excluded from cumulative GPA	-

Grades designated by a blank, (), in the grade-point column are not considered in the computation of hours attempted, hours earned, grade-points earned, or grade-point average.

The above scale is known as a four-point grading system since 4.0 is the highest grade-point assigned. The number of grade-points earned is computed by multiplying the grade-point value for the letter grade times the number of semester credits for the course. For example, a student who receives an "A" (4 grade-points) in a three-credit course earns 12 grade-points.

The notation (#), when following a letter grade, means that letter grade is not computed in the grade-point

average (GPA). The notation (%), when following a letter grade, is assigned by the Honor Council and is computed in the GPA. When a grade of "F" is followed by an asterisk (*), the mark of "I" was changed to "F" for failure to complete the course work in the allotted time frame.

Mark of Audit (AU)

Class size permitting, a student may register for a course on an audit basis. A student may register for audit only during add/drop and late registration periods as a new registration and not as a change from credit to audit. Auditing a course means a student enrolls in a course but does not receive academic credit upon completion of the course. A student who registers on an audit basis is subject to attendance regulations of that class and may be administratively withdrawn by an instructor for a violation of class requirements for audit students, before or after the normal eight week withdrawal deadline. A student who registers for audit may be subject to other course requirements at the discretion of the instructor. Audit students are charged the regular rate of tuition and fees. An audit course is counted as part of the student's semester load.

Mark of Continued (CO)

The mark of "CO" may be assigned as an interim mark for those courses which run over several grade reporting periods. The "CO" mark indicates the course is not expected to be completed in a single semester and that the student must reregister for the course in the following semester. Upon departmental notification "CO" marks for courses not reregistered for in the following semester are converted to "F" grades. Upon completion of the course, a final grade is assigned for that semester and the previous "CO" mark(s) remain. This mark may be assigned only in courses approved for such grading.

Mark of Credit (CR)

Courses assigned the "Credit" grade will not be computed into the grade-point average.

Mark of Honors (H)

Courses assigned the "Honors" grade will not be computed into the grade-point average.

Mark of High Pass (HP)

Courses assigned the "High Pass" grade will not be computed into the grade-point average.

Mark of Incomplete (I)

When circumstances beyond a student's control prevent the student from meeting course requirements at the end of the semester, the student may request the instructor to assign the mark of "I" for that semester. If in agreement with this request, the instructor fills out an *Incomplete Grade Assignment* form bearing the student's signature. This form is then submitted with the

grade sheet for that course by the faculty member. A grade cannot be changed to "I" after the deadline for grade submissions.

The time limit for submission of all course work necessary for removal of an "I" given during the fall semester is 30 calendar days after the beginning of the following spring semester. For "I" grades given during the spring semester or summer session, all course work must be submitted within 30 days after the beginning of the following fall semester. For programs leading to the MD, DDS, or PharmD degrees, contact the appropriate dean's office for the maximum time limit allowed.

These deadlines may be extended if the student requests that extension in writing and is granted approval by the instructor and the dean of the school in which the course was offered.

Upon expiration of the deadline, an incomplete that has not been changed to a grade is automatically changed to an "F".

Mark of Marginal (M)

Courses assigned the "Marginal" grade will not be computed into the grade-point average.

Mark of Pass (P)

The mark of "P" may be assigned only in courses approved for such grading. This grade denotes satisfactory completion of course requirements. If course requirements are not met satisfactorily, a grade of "F" is assigned. Courses assigned the grade of "P" are not computed in the GPA. However, courses assigned the grade of "F" are computed in the GPA.

Mark of Progress (PR)

A "PR" is assigned as an interim grade for certain continuing course requirements which run over the grade reporting periods. The mark of "PR" may be assigned only in courses approved for such grading. Unlike the mark of "I", "PR" will not automatically be changed to a failing grade at the end of the succeeding semester.

Mark of Withdrawn (W)

The mark of "W" indicates the student has officially withdrawn from the course or has been withdrawn for nonattendance. The last day to withdraw for the fall and spring semesters is the end of the eighth week of classes. Summer session students should check the *Summer Schedule of Classes* for withdrawal dates.

For further information see the "Withdrawal From the University" section.

Grade-Point Average

The GPA is computed by dividing the number of grade-points earned at VCU by the number of credits attempted at VCU. **The grades of accepted transfer courses are NOT included in the computation of the VCU GPA.**

Repeated Courses

Because some health science programs do not allow students to repeat courses, any student planning to do so must first consult with his or her adviser, program director, or department chair.

The semester credits attempted and the grade-points earned for all attempts are included in computing the cumulative grade-point average. No matter how often a course is repeated, it may be counted only once as credits presented toward graduation.

Courses attempted on the Academic Campus can be repeated. All credits attempted and grade-points earned are included in the computation of the cumulative GPA with one exception, which applies only to students enrolled in programs on the Academic Campus.

If a student repeats a course in which a "D" or "F" was earned on the first attempt, the student may request at the time of registration that only the better grade be counted in computing the cumulative grade-point average. The grade is not excluded until the request is made. If, however, more than one "D" or "F" grade is received in the same course, only one of these grades will be removed from the computation of the cumulative grade-point average.

A student can file the Repeated Course Request Form at any time during a semester prior to the awarding of the undergraduate degree. This form must be filed before the last week of classes in any semester so the cumulative GPA can be adjusted at the end of that semester.

Grades for all attempted courses remain on the student's permanent record. Students may not repeat courses for which they have previously received transfer credit without losing the transfer credit. A repeated course may be counted only once toward credits necessary for graduation. Before repeating a course, the student should consult with the adviser or department chair.

Students who choose to repeat a course must do so before the awarding of their undergraduate degrees from any school or college at VCU or from any other college or university. The student's GPA at graduation will not be affected by repeating a course at any time after graduation.

Grade Exclusion Policy

This policy is applicable to former students enrolled in programs on the Academic Campus who have been separated completely from VCU for five years or more; are now entering an Academic Campus program; and who earn at least a 2.0 GPA on the first 12 semester hours completed.

Under this policy, eligible students may request "D" and "F" grades previously earned at VCU be excluded from their total credits earned and GPA computation for the purpose of meeting scholastic continuance and graduation requirements.

All earned grades, including those excluded "D" and "F" grades, remain on the student's permanent academic record. Excluded grades must be approved by the student's major department chair and by the dean of the school. The grade exclusion policy may be used only once

during a student's enrollment at VCU and cannot be revoked by the student after approval is granted. A student who chooses to use this policy must do so before the awarding of his or her undergraduate degree.

Change of Grade

A final grade may be corrected by the faculty member with proper submission of the Change of Grade Form to the chair of the department in which the course was taught. The chair will forward the form to the school's dean who will send it to the Office of Records and Registration. For grades awarded in the fall semester, the change of grade must be submitted by the department chair no later than 30 calendar days after the beginning of the following spring semester. For grades awarded in the spring semester or summer, the change must be submitted no later than 30 days after the beginning of the following fall semester. However, a change of grade that affects the student's academic eligibility to enroll must be made during the first week of classes in the semester or summer session in which the student plans to continue attendance.

Grade Review Procedure

If a student feels a grade is inaccurate, he or she should discuss the grade with the faculty member who assigned it. This allows the faculty member to explain how the final grade was determined. If an error is detected, the faculty member can submit a change of grade.

If no agreement is reached and the student still feels the grade was unfairly assigned, the student can submit a written appeal to the chair of the department in which the course was taught. For grades awarded in the fall semester, the change of grade appeal must be submitted to the department chair no later than 14 days after the beginning of the following spring semester. For grades awarded in the spring semester or summer session, the appeal must be submitted no later than 14 days after the beginning of the following fall semester.

The burden of proof falls upon the student and the written appeal should state and support, with available evidence, the reasons why the student believes the grade should be changed. The chair of the department will attempt to mediate an amicable solution within two weeks of receipt of the written appeal. If the complaint is unresolved, the chair will forward the student's appeal, together with the chair's recommendation, to the dean of the school in which the course was taught.

The dean then forms a Grade Review Committee composed of a nonvoting faculty chair, two faculty members, and two students. The committee reviews all written materials and records and then arranges for a hearing unless the appeal is judged patently without merit. At the hearing, the committee hears evidence and testimony from all parties. The committee has the option of either raising the grade or leaving the grade unchanged. However, a change of grade that affects the student's eligibility to enroll must be made during the first week of classes during the semester or summer session in which the student wishes to continue attendance.

The Grade Review Procedure is printed in full in the *VCU Resource Guide* and on the Web at <http://www.vcu.edu/safweb/rg/policies/rg7grades.html>.

Transcripts

A transcript is a copy of the student's permanent academic record. An official transcript carries the University Seal. Unofficial transcripts given directly to students contain the same information as an official transcript but do not carry the University Seal.

Transcripts of student academic records are issued by the Office of Records and Registration only upon the written request of the student. The request should be made at least one week before the transcript is needed. Unofficial transcripts, for currently enrolled students, can be obtained from kiosks located in Founders Hall, Sanger Hall, the Business Building, and the Student Commons.

A transcript is issued only after the student has paid all University bills.

Transcript requests signed by the student may be submitted in person at the Student Services Center, Room 102 Founders Hall (Academic Campus), Room 1-055 Sanger Hall (MCV Campus) or by mail to the Office of Records and Registration, 827 West Franklin Street, PO Box 842520, Richmond, VA 23284-2520 (Academic Campus), Office of Records and Registration, 1101 E. Marshall Street, P.O. Box 980277, Richmond, VA 23298-0277 (MCV Campus).

Continuance in Academic Programs

Academic Campus Programs

Definition of Good Standing. A student who has been admitted to VCU and is currently enrolled is in "good standing" until such time that the student is placed on academic warning, probation or suspension.

Academic Warning. A student is placed on academic warning when the student's GPA falls below 2.0 (grade "C") at the conclusion of any term of attendance – fall, spring or summer. Notification of warning appears on the student's grade report. A student remains on academic warning for one term of attendance, at the end of which time the student must obtain a cumulative GPA of at least 2.0. Failure to achieve this GPA results in academic probation.

Academic Probation. A student is placed on academic probation when the student's cumulative GPA falls below 2.0 for two successive terms of attendance.

A degree-seeking student on academic probation may not enroll in more than 12 credits per term of attendance. Students on academic probation are expected to improve their cumulative GPA by achieving a semester GPA of 2.0 or better during each term of attendance. A student who achieves a cumulative GPA of at least 2.0 is removed from academic probation.

Academic Suspension. A student is placed on academic suspension when the student's cumulative GPA is below 2.0 for two successive semesters and the following term of attendance GPA falls below 2.0.

Notification of suspension appears on the student's grade report and the student also receives a letter from

the Office of Records and Registration stating the conditions of the suspension. A notation of the suspension is placed on the student's permanent record. Academic suspension indicates the student has a record of continued unsatisfactory progress.

A student on academic suspension may not enroll at the University for two consecutive semesters, including the summer session. Course work taken at another institution while the student is under academic suspension from VCU is considered part of the criteria for readmission, but **the course work is NOT used to increase the VCU cumulative GPA.** If the student is readmitted, the course work will be evaluated according to regular procedures.

A student may apply for readmission to VCU for the semester following completion of the suspension period. A student readmitted after suspension enrolls under the academic probation status and is subject to the provisions of that status. If a student readmitted after suspension fails to obtain a semester GPA of 2.0 in any term before achieving a cumulative GPA of at least 2.0, the student receives a second, and final, suspension. The student may be considered for readmission after a minimum five-year separation from VCU.

For readmission guidelines, see Part II of this *Bulletin*.

MCV Campus Programs

Warning, probation and suspension are defined by the program of study. Consult program adviser for further details.

Termination of Enrollment

The University reserves the right to terminate the enrollment of any student for unlawful, disorderly, or immoral conduct, or for persistent failure to fulfill the purposes for which he or she was matriculated. Any students whose relations are so severed forfeit all rights and claims with respect to the institution.

In addition to dismissal for failure to comply with standards of conduct described in the *Rules and Procedures of Virginia Commonwealth University* and the *VCU Honor Code*, a student may be dismissed from the school in which he or she is enrolled for failure to meet academic requirements prescribed by his or her school or failure to exhibit the attitudes and skills deemed necessary to function within the chosen professional practice. VCU recognizes its responsibilities to the health professions and to the consumer of health services. Therefore, any action by a student considered to be unprofessional conduct according to the code of ethics and the laws and regulations governing the student's chosen profession, shall constitute cause for disciplinary action.

Unprofessional conduct includes, but is not limited to:

1. fraud or deceit in gaining admission to the University, i.e., false or obviously misleading representations on the admissions application;
2. an act that violates the established legal standards regarding conduct of one person towards society, i.e., stealing, lying, cheating, and slander; and
3. conviction of a felony involving moral turpitude.

The individual health science schools recognize and support the statements set forth by the licensing boards of the respective health professions as they relate to examination, licensure, and the practice of each profession. When applicable, these standards may be used in determining a student's eligibility for continuance in or readmission to the University.

Honors

Dean's List

The dean's list is a recognition of superior academic performance. A student is automatically placed on the dean's list for each semester in which a semester GPA of at least 3.5 is attained, based on a minimum of 12 semester credits excluding courses graded credit/non-credit with no grade below "C". A notation is placed on the student's permanent academic record. Students earning marks of "I" or "PR" are ineligible for the dean's list for the semester in which these grades were earned.

Graduation Honors

Candidates for a baccalaureate degree who complete a minimum of 45 credits at VCU and are enrolled may qualify for graduation honors. Awarding of honors for both Academic and MCV Campus programs is based on the student's cumulative GPA at the time of graduation. Cum Laude is awarded for a 3.30 to 3.59 GPA, Magna Cum Laude is awarded for a 3.60 to 3.89 GPA, and Summa Cum Laude is awarded for a 3.90 GPA or better.

Calculation of the GPA for honors determination is based on grades received for all courses taken for credit at VCU, as well as for credits accepted for transfer at VCU. However, to qualify for graduation honors, a student's GPA for courses taken for credit at VCU must be at least as high as the minimum required for the specific honor bestowed. Recognition of graduation honors is made on the student's diploma, permanent record, and in the commencement bulletin.

Degree Requirements for All Undergraduate Students

The degree requirements that must be fulfilled by all degree-seeking students on the Academic Campus are listed below. For additional degree requirements, students must consult the school and major departmental sections of this *Bulletin*. For Professional degree requirements, consult school sections of this *Bulletin*.

Grade-Point Average

A cumulative GPA of 2.0 (grade "C") or better is required in order to receive a baccalaureate degree. Only credits taken at VCU are computed in the GPA.

Some programs may require a higher cumulative GPA. Students should consult the section of this *Bulletin* that deals with their major for any GPA requirements above the University's 2.0 minimum.

Total Credits

The total number of semester credits required for graduation depends on the student's major. Specific information on total credit requirements is detailed under degree program descriptions in this *Bulletin*, beginning with Part VII.

Major Concentration

To receive the baccalaureate degree, a student must attain a 2.0 GPA or better in all courses in the student's major presented for graduation. Only credits taken at VCU are computed in the GPA. Students should consult the appropriate section of this *Bulletin* dealing with their majors for any GPA requirements above the 2.0 University minimum.

Upper-Level Courses

A minimum of 45 credits is required in 300-500-level courses for a bachelor's degree; therefore, credits transferred from two-year institutions can not be used to fulfill this requirement.

Last 25% Rule

Degree candidates must complete the last 25% of the credit semester hours required for their bachelor's degree program at this institution.

This requirement does not apply to students who participate in VCU-sponsored programs abroad or who earn course credit at a cooperating university through VCU domestic and international university exchanges.

Graduation Application

Although VCU confers degrees in May, August, and December, an annual commencement exercise is held only in May. Each student who expects to complete the degree requirements by the end of a semester or summer session must file an application for the degree at the beginning of that term.

Application request forms are available at the Student Services Center in Founders Hall for Academic Campus Students. MCV Campus students should contact their department for graduation applications. Degree applications must be submitted by the dates indicated in the calendar appearing in the front of this *Bulletin*. A student needs to schedule a conference with the adviser well in advance of the deadline, and should remember that the application also requires approval by the department chair and dean.

Special Notes for Graduating Financial Aid Recipients

If a student plan to continue enrollment at Virginia Commonwealth University after graduation and want financial aid, he/she must apply and be accepted as a degree/certificate-seeking student and enroll at least half-time to meet financial aid enrollment requirements.

If a student received federal loan funds during enrollment at VCU, he/she may be required to complete a loan

exit counseling session as listed below. The student's diploma will not be released until he/she completes this required obligation.

Exit Counseling Required

Loan Population	Contact Point
Perkins Loans	
HPSL	VCU Accounts Receivable
NSL	327 West Main Street
LDS	P.O. Box 843055
Primary Care	Richmond, VA 23284-3055
University	(804) 828-4538
Long Term	
MCV Campus	VCU Financial Aid
	1101 East Marshall Street
	Room 1-055
all other loans	P.O. Box 980244
	Richmond, VA 23298-0244
	(804) 828-9800
School of Dentistry	School of Dentistry
	Lyons Building
	520 North 12th Street
	Room 309
	P.O. Box 980566
	Richmond, VA 23298-0566
	(804) 828-9196
School of Medicine	School of Medicine
	Sanger Hall
	1101 East Marshall Street,
	Room 1-003
	PO Box 980565
	Richmond, VA 23298-0565
	(804) 828-4006

Exit Counseling Optional

Loan Population	Contact Point
Federal Direct Loan	VCU Financial Aid
	901 West Franklin Street
	PO Box 843026
Federal Stafford Loan	Richmond, VA 23284-3026
	(804) 828-6669

Commencement Participation Policy

MCV Campus graduation candidates for degrees to be conferred at the close of the spring semester must be present to receive their degrees unless excused by the deans of their schools. No individual may be exempt from this regulation.

When a student has submitted a degree application for spring graduation but does not meet degree requirements due to extenuating circumstances, the student's dean may permit the student to participate in commencement exercises. Permission may be granted only when six or fewer credit hours are lacking for degree completion and the student demonstrates his or her intent to complete the needed credits by the end of the summer session.

When such an exception is made, the dean confirms the following conditions to the student:

- Participation in the commencement ceremonies does not mean the student has been awarded a degree.
- The degree will not be awarded until all degree requirements have been met and the student has satisfied all financial obligations to VCU.

- The exemption is made only to accommodate the student's request and does not obligate VCU to ultimately grant a degree unless all requirements and conditions have been met.

Degree Options

Second Baccalaureate Degree

A student who already has earned a baccalaureate degree and wishes to earn a second baccalaureate degree at VCU needs to complete an *Application for Undergraduate Admission*. This form is available at the Office of Admissions and should be submitted, after completion, to that office.

Students accepted are referred to the dean's office of the school offering their intended major. The dean's office evaluates the student's academic record and prepares a statement of advanced standing that lists transferable credits to the second degree program.

A student seeking a second undergraduate degree from VCU must earn a minimum of 30 additional credits at VCU and also must satisfy any supplementary requirements of the department or school granting the degree.

Double Major

A double major is the concurrent fulfillment of the requirements of two majors. To earn a degree with two majors, the student must complete the courses required in each major, any collateral/prerequisites courses required for both majors, and the General Education requirements of the primary major.

The primary major is the major which appears on the transcript as the degree awarded and the second major will appear as an accompanying note. One diploma is awarded, and a notation recognizing the completion of the double major is posted on the student's permanent academic record.

To initiate a double major, a student should obtain the necessary form and instructions from the Student Service Centers in Founders Hall or Sanger Hall.

Dual Degrees

Dual degrees are the concurrent fulfillment of the requirements of two majors and two degrees. To earn dual degrees, the student must fulfill all the requirements of the degree programs in both majors. The student must complete an additional 25% of hours above the minimum hour requirement of the major requiring the most credits (refer to the section "Last 25% Rule"). Two diplomas are awarded, and a notation recognizing the completion of the dual degrees is placed on the student's permanent academic record.

Minor Areas of Concentration

Although a minor is not required for completion of a degree, a student may elect any approved minor area of concentration. A minor is the completion of a group of courses within an area of specialization. Usually the

minor requires less course work than the major. The minor may be used to fulfill career needs or to facilitate in-depth investigation in a discipline of secondary interest to the student.

A student who wishes to pursue a minor must complete a *Change of Major/Minor Form*. The courses for the minor are chosen from courses approved for the minor. Students must achieve a minimum 2.0 GPA in the area of the minor. The minor becomes official only after the Office of Records and Registration has received the *Change of Major/Minor Form* signed by the dean or chair of the appropriate school. A notation recognizing the fulfillment of the requirements for a minor are posted on the student's permanent record at the time of graduation. The student must submit a Minor Application Form when the student submits an application for graduation. Minor Application Forms are available at the Student Services Centers in Founders Hall and Sanger Hall.

Appeal to Waive an Academic Regulation, Academic Regulations Appeals Committee

The Academic Regulations Appeals Committee (ARAC) considers appeals for exceptions to undergraduate program academic regulations listed in this *Bulletin*. The committee, composed of faculty and administrators from each school and the college, and representatives from the Office of Records and Registration, the Division of Student Affairs, and the Division of University Outreach, is a standing committee of the Office of Academic Affairs. The Provost and Vice President for Academic Affairs appoints committee members.

Undergraduate students who wish to petition the University for a waiver of the regulations in this *Bulletin* may do so through the ARAC. Examples of typical petitions are requests for retroactive withdrawal, waiver of the continuance policy following a suspension, or a waiver of the rule requiring that the last 25% of a program be earned in residence at VCU. Students may petition for past semesters, but cannot ask for waivers after having graduated.

To begin the appeal process, students should contact the ARAC representative in the dean's office for their school or the college; special students should contact the Office of Community Programs. The student then works with the representative to prepare the petition following guidelines established by each school and the college. Traditionally, the first step is for the student to prepare a letter which details the extenuating circumstances supporting the student's belief that the University should waive its regulations and grant the request. All circumstances cited in the student's letter must be documented, and the student is responsible for gathering all the necessary documentation. Examples of documentation include medical records, police reports, death certificates, and employer reports. Things which may not be used as documentation include letters from parents, friends, or relatives. Any petition which does not have the required documentation will not be heard.

After the ARAC representative receives the student's letter and all necessary documentation, he or she will prepare a petition cover sheet and, if appropriate, gather pertinent information from faculty. When the petition is complete, it will be presented to the committee at one of its semimonthly meetings. Requests are granted or denied by a majority vote by the committee. Decisions are effective immediately, and students are notified by their representative. All committee procedures are confidential and ensure the right of privacy of the student.

Since a request to waive a regulation is itself an appeal, committee decisions are final, and there is no further appeal within the University. However, if new documentable information is provided, petitions may be brought back before the committee. A rewritten student letter does not constitute new documentation. The representative will request that the petition be reheard based upon the new information and the committee will vote on that request.

Special Academic Programs and Services

University Honors Program

John F. Berglund

Director

Anne L. Chandler

Associate Director

The Virginia Commonwealth University Honors Program was established to meet the needs of academically talented undergraduate students through a challenging and exciting program with high academic standards. The Honors Program offers students an opportunity to exchange ideas, ask questions, and explore values with bright fellow students and teachers who have been selected carefully for their scholarship and teaching excellence. The University Honors Program offers the opportunity for students to expand their creative and intellectual horizons, and to benefit from small classes in which there is greater interaction between students and faculty and among students themselves. For a detailed description of qualifications for admission see Part II.

Graduation with University Honors

Academic advisers at VCU help Honors students select classes that will fulfill the requirements for graduation and match students' interests. In addition, Honors students are eligible to take courses designated as Honors. Some Honors courses are special sections of regular courses open to Honors students only, in which class size is limited to maximize opportunities for interaction directly with the instructor and fellow students. Other Honors courses are special courses for the Honors Program. Of particular interest among these are modules. These are single focus topics courses, which occupy only one-third of a semester. The modules are often interdisciplinary and strive to connect rather than isolate studies. Each module counts for 1.5 credit hours. All Honors courses are noted on the student's official transcript.

To graduate with University Honors, students are required to take at least six modules. In addition to completing at least six module courses and maintaining a GPA of 3.50 or higher, the student must present a dossier documenting how the student has become a well-educated individual. The dossier will be presented to the Director and the University Honors Council in the penultimate semester of the student's academic work. See the *Honors Handbook* for specific deadline dates.

In the dossier, students refer to the following guidelines explaining how they have been fulfilled or explain-

ing why an alternative was more appropriate in the student's particular situation.

Guidelines and Regulations

1. The Honors student must have at least a 3.50 cumulative GPA and a 3.20 GPA in Honors courses.
2. The Honors student should achieve a standard of excellence in general education as well as in the student's major field.
3. Honors students should show well-roundedness by enrolling in at least two upper-level courses outside their field of specialization.
4. The Honors student should complete at least 18 credit hours in courses designated as Honors courses. Among these, the Honors student must include at least nine credit hours in module courses. Modules are short courses which carry 1.5 credits each. The purpose of the module is to offer the honors student the opportunity to focus on special topics in a challenging academic format. The Honors student must complete at least six modules, and the nine credits thus earned may be counted as part of the 18 credits in Honors courses.

It is important to note that the ideas expressed above are to be considered as guidelines to the development of a dossier. Only the GPA minimums and the six modules are required to graduate with University Honors. The central objective of the University Honors Program is that the student demonstrate good scholarship and sound learning in the best of the University's tradition.

Special Opportunities

The Honors Program sponsors a variety of intellectual, cultural and social activities as important supplements to classroom study. Among these are:

The Honors Idea Exchange – an approved student campus organization composed of Honors students. *The Idea Exchange* decides each year on its projects and activities. In the past these have included picnics and potluck suppers on the social side and tutoring children and adults, and environmental cleanups on the projects side. The main activity, however, is what the name implies: exchanging ideas.

Weekly Brown Bag Lunches – informal discussions on topics pertinent to the wide-ranging interests of Honors students. Discussions are led by outstanding guest speakers from the University faculty and administration, and from many different fields in the community.

Honors Seminars – an arena where students can witness and participate in dialogue between faculty. With more structure than Brown Bag Lunches, the seminars afford the opportunity for presenting scholarly ideas for discussion and debate.

Outstanding Lecturer Series – World renowned scholars are brought to the VCU Campus to lecture on topics of interest and concern to Honors students. Students have the opportunity to meet informally with the speakers.

The University Honors Program is committed to enriching the students' academic and personal endeavors. Since people in the Honors Program are serious students, special privileges beyond the vast resources available to all VCU students are provided. Some of these privileges include:

- Registration priority;
- Special library privileges;
- Availability of special housing.

The center of activities and community for the University Honors Program is in the Valentine House, a Victorian brownstone house at 920 West Franklin Street. In the house students have meeting rooms, quiet study rooms, a copy machine, computers, and recreational areas. Valentine House is open at night for study and during the day.

Courses in Honors

HON 198 Freshman Honors. Semester course; 3 lecture hours. Variable credit; maximum total 8 credits. Prerequisite: Permission of Honors director. Course may be repeated once under different topic. An interdisciplinary course which will provide an intensive study of selected topics.

HON 298 Sophomore Honors. Semester course; 3 lecture hours. Variable credit; maximum total 8 credits. Prerequisite: Permission of Honors director. Course may be repeated once under different topic. An interdisciplinary course which will provide an intensive study of selected topics. Appropriate prerequisites or corequisites may be demanded.

HON 398 Honors Topics. Semester course; 3 lecture hours. Variable credit; may be repeated with different topics. Prerequisite: Permission of Honors director. An in-depth study of selected topics. May be cross-listed with departmental courses. See the *Schedule of Classes* for specific topics to be offered each semester. Appropriate prerequisite or corequisites may be demanded.

HON 399 Honors Module. One-third semester course; 3 lecture hours. 1.5 semester hours of credit per module. Prerequisite: Permission of the Honors director or the chair of the offering department. Intensive studies of topics from a wide spectrum of disciplines are undertaken. Each module is a self-contained unit. Nine semester hours of credit must be taken in Honors modules to complete the Honors Core. See the *Schedule of Classes* for topics.

HON 492 Honors Independent Study. Semester course; maximum of 4 semester hours of credit per semester, maximum total over all semesters of 9 semester hours of credit. Variable credit. Prerequisites: Junior or senior standing, approval of Honors director and instructor/tutor. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

Academic Success Center (ASC)

The mission of the Academic Success Center is to provide assistance to students and faculty that will help students attain their academic potential. The Academic

Success Center will focus on the development of student success tools including both retention strategies and incorporation of instructional technology and other intervention methods. Working also through General Education courses, the center will provide a comprehensive approach to student and faculty development to enhance learning. The ASC will support linkages with the college, the schools, and other University services for the benefit of faculty and students.

The Academic Success Center seeks to enhance the success and promote the retention of all students. Many center activities focus on VCU's nontraditional students, i.e., minority, low income, first-generation college students. The center provides counselor support, academic planning, tutorial assistance, career planning, and a variety of seminars and workshops designed to meet the needs of VCU students.

College Transition Program. This Academic Success Center program provides an alternative admissions process for students who marginally meet or fall below the University's requirements for admissions as full-time degree-seeking students. Students who are accepted into the College Transition Program have demonstrated potential for academic achievement that is not always indicated by their SAT scores. Students admitted may be required to attend a developmental program during the summer before their University enrollment. Students enroll in courses in mathematics, English, reading/study skills, and orientation to the University. This summer experience allows students to ease into the rigorous demands of university life by improving basic academic skills and personal confidence.

During the academic year, participants maintain close contact with the program and counselors. Students are monitored by their counselors to ease their adjustment to the University. College Transition Program participants are selected from a variety of academic, economic, geographic, and cultural backgrounds. Early application to the University is encouraged, especially for students who also need financial aid. For information about the College Transition Program write to the Academic Success Center, Virginia Commonwealth University, P.O. Box 842500, Richmond, VA 23284-2500, or call (804) 828-1650.

Certificate Programs

Post-Baccalaureate Certificate Programs

accounting
aging studies
applied social research
criminal justice
environmental studies
human resource development
human resource management
information systems
marketing
mathematical sciences
computer science
statistics
patient counseling
planning information systems

pre-medical basic health sciences
 anatomy
 biochemistry and molecular biophysics
 human genetics
 microbiology and immunology
 pharmacology and toxicology
 physiology
 public management
 real estate and urban land development
 teaching
 urban revitalization

Post-Master's Certificate Programs

nurse practitioner
 principalship
 professional counseling
 reading specialist

For additional information, see the academic program's section of this *Bulletin* and the *Graduate Bulletin*.

Dietetic Internship

A post-baccalaureate, accredited dietetic internship is offered through the Medical College of Virginia Hospitals. Qualified applicants must have completed an undergraduate or graduate program in dietetics. For additional information contact the Dietetic Internship Director, Medical College of Virginia Hospitals, Virginia Commonwealth University, P.O. Box 980294, Richmond, VA 23298-0294.

Rehabilitation Services

Undergraduate courses in rehabilitation services are offered in interdisciplinary cooperation with other majors. Such offerings are Pathways, a unique interdisciplinary program concentration designed for students interested in pursuing alcohol and drug rehabilitation studies, and the Bachelor of General Studies program with a focus in a rehabilitation services area. For specific information see Part IX, Part XX, and "Pathways" in this section of the *Bulletin*.

Minors

In addition to the major, a student may elect a minor area of concentration in any program or department offering such a program. The minor can be used to fulfill career needs. It can also serve as a means for the student to study a discipline of secondary interest.

African-American studies
 American studies
 art history
 anthropology
 biology
 business, general
 chemistry
 computer science

crafts
 criminal justice
 dance
 economics
 education
 foundations of special education
 health education
 physical education
 engineering
 chemical
 electrical
 mechanical
 English
 environmental studies
 fashion merchandising
 French
 geography
 German
 history
 international studies
 Judaic studies
 Latin American studies
 marketing
 mathematical sciences
 music
 painting and printmaking
 philosophy
 philosophy of law
 photography/film
 physics
 political science
 psychology
 public management
 recreation, parks and tourism
 religious studies
 Russian area studies
 sculpture
 social welfare
 sociology
 Spanish
 statistics
 urban studies
 women's studies
 writing (see English)

For a complete list of academic degree programs, see the academic program's section of this *Bulletin*.

Pathways

Pathways, initiated in the Spring of 1996, is a unique interdisciplinary program concentration designed for students from a wide variety of academic departments who are interested in studies in substance abuse education and rehabilitation. A sequence of recommended courses is offered to students who are majoring in psychology, criminal justice, social work, pharmacy, nursing, and rehabilitation counseling. Other academic and professional disciplines are also included and welcome to participate in the program. The sequence of course work depends upon the level of intensity sought by the student, and it may range from only a single introductory

course to a complete specialization. Pathways enables students to select a curricular path which matches their substance abuse rehabilitation interest regardless of their discipline. The program is available to students from pre-degree levels to doctoral studies, and is arranged in collaboration with the student's major adviser and/or the Director of the Rehabilitation Substance Abuse Counselor Education Program, Department of Rehabilitation Counseling.

VIII

P A R T

College of Humanities and Sciences

Stephen D. Gottfredson

Dean (1997) BA 1971 University of Oregon; MA 1977 and PhD 1977 Johns Hopkins University

Albert T. Sneden

Associate Dean and Professor of Chemistry (1977) BS 1968 Carnegie Mellon University; PhD 1975 Brandeis University

John H. Borgard

Associate Dean and Assistant Vice Provost for Academic Affairs (1971) AB 1960 and MEd 1964 Marquette University; PhD 1974 Loyola University

Arthur J. Seidenberg

Assistant Dean for Undergraduate Academic Affairs, Coordinator of Pre-Health Sciences Advising and Associate Professor of Biology (1968) BS 1961 Brooklyn College; PhD 1969 University of Illinois

Marcia Zwicker

Director of Undergraduate Academic Advising (1965) AB Brown University; MA 1964 University of Connecticut

School of Mass Communications

June Orr Nicholson

Acting Director and Associate Professor of Mass Communications (1984) BA 1968 University of North Carolina, Chapel Hill; MA 1979 American University

Mission of the College

The faculty and staff of the College of Humanities and Sciences are dedicated to excellence in our teaching, research, and public service. The mission of Virginia Commonwealth University provides the framework for our pursuit of excellence.

Teaching and learning are central to the College, and the College is central to the educational and intellectual life of Virginia Commonwealth University. The College meets the educational needs of a diverse student body, provides general education for all undergraduate students of the University, preparatory programs for the health sciences, engineering, and law, and education in the liberal arts and sciences for future teachers. We offer comprehensive undergraduate, graduate, and professional programs of study which link a foundation of understanding and knowledge with skills on which students can build careers, become responsible citizens, and continue lifelong learning.

Scholarship, creative work, and professional accomplishment are essential to teaching and learning. We are responsible for advancing understanding and increasing

knowledge for its own sake, for the educational benefit of our students, and for the good of the larger community.

In both teaching and research, the College of Humanities and Sciences takes seriously the responsibilities of being part of a public, urban university. Through service and public teaching, we meet the challenges and opportunities afforded by our metropolitan environment and by our location in the capital of the Commonwealth.

The College achieves national and international recognition through the success of our students, through the advancement of the disciplines and professions represented by our programs, and through the individual and collaborative research of its faculty.

Undergraduate Degree Programs

The College of Humanities and Sciences offers baccalaureate degrees in 18 areas:

- biology – BS
- chemistry – BS
- computer science – BS
- criminal justice – BS
- economics – BS
- English – BA
- foreign languages – BA
 - comparative literature
 - French
 - German
 - Spanish
- history – BA
- mass communications – BS
- mathematical sciences – BS
 - applied mathematics
 - computer science
 - mathematics
 - operations research
 - statistics
- philosophy – BA
- political science – BA
- physics – BS
- psychology – BS
- religious studies – BA
- science – BS
 - environmental studies
 - general science
- sociology and anthropology – BS
- urban studies and planning – BS

Information concerning curricula is given in the respective departmental and school sections.

Minor Areas of Concentration

In addition to the major, a student may elect a minor area of concentration in any program or department offering such a program. The minor can be used to fulfill career needs. It can also serve as a means for the student to study a discipline of secondary interest.

Students interested in pursuing a minor should discuss their intentions with their advisers or the chair of the major department. When the student decides on a minor, a *Change of Major/Declaration of Minor* form must be completed in the Office of Records and Registration. When the student files for graduation, the student must complete the *Minor Application* along with the *Graduation Application*.

Courses for the minor should be chosen from courses approved by departments offering minors in their areas. Generally, students can not minor in the same area as their major.

A minor designation on the transcript requires a minimum of 18 credit hours and a minimum 2.0 grade-point average (GPA) must be achieved in the minor. Prerequisites for courses are stated under course descriptions in this *Bulletin*.

Detailed descriptions of each minor appear under the various departmental headings in this section of the *Bulletin*.

Minors are offered in the following areas:

- African-American studies
- American studies
- anthropology
- biology
- chemistry
- computer science
- criminal justice
- economics
- English
- environmental studies
- French
- geography
- German
- history
- international studies
- Judaic studies
- Latin American studies
- mathematical sciences
- philosophy
- philosophy of law
- physics
- political science
- psychology
- public management
- religious studies
- Russian area studies
- sociology
- Spanish
- statistics
- urban studies
- women's studies
- writing (see English)

Preparation for Professional Studies

In addition to providing studies in liberal arts at the undergraduate and graduate levels, the College of Humanities and Sciences offers undergraduate preparatory programs and advising for the following areas:

- pre-clinical laboratory sciences
- pre-dental hygiene
- pre-dentistry
- pre-law
- pre-medicine
- pre-nursing
- pre-occupational therapy
- pre-optometry
- pre-pharmacy
- pre-physical therapy
- pre-radiation sciences
- pre-veterinary medicine

Specific curricular descriptions are listed elsewhere in this section.

Teacher Preparation

Students in the College of Humanities and Sciences can apply to the Extended Teacher Preparation Program sponsored jointly with the School of Education. This program awards both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education. Students who successfully complete this program will be certified to teach in early childhood, middle, secondary, or special education.

Additional information on this five-year program is available at the School of Education's Office of Academic Services at 2087 Oliver Hall, or by calling 828-1927. A more thorough description of this program is found under the "School of Education" section of this *Bulletin* and in the *Extended Teacher Preparation Handbook* available from the Division of Teacher Education or the College of Humanities and Sciences Dean's Office.

Graduate Studies

Master's degree programs are offered in biology, chemistry, computer science, creative writing, criminal justice (including forensic science), English, history, mass communications, mathematical sciences, physics and applied physics, psychology, sociology, and urban and regional planning.

Doctoral programs are available in chemistry (including chemical physics) and psychology. Doctoral programs are also available in social policy and social work through the School of Social Work and in urban services through the School of Education. The *Graduate Bulletin* describes these graduate programs in detail.

Student Advising

Individual student advising is an integral part of the programs in the College of Humanities and Sciences. An important personal link in the University organization,

the faculty adviser helps each student establish a relationship between the student's special needs and University services. The adviser also assists the student in career selection and helps the student in understanding University procedures.

Undeclared majors and freshmen receive advising through the Office of Academic Advising. After freshman year or when the undeclared student declares a major, the department in which the student intends to major assigns a faculty adviser to each student.

Students are responsible for making sure course selections satisfy graduation requirements of the departmental major programs, general requirements of the College of Humanities and Science, and general degree requirements of the Academic Campus. Consultation with the adviser, and/or dean, along with frequent reference to this *Bulletin* and Humanities and Sciences Graduation Worksheets ensure that students meet these responsibilities.

Students also are responsible for familiarizing themselves with academic regulations of the Academic Campus concerning change of major, continuance, and so on, as explained in Part VI of this *Bulletin*.

Educational Goals

The ultimate goal of a liberal education is to help students develop the abilities to think and continue learning. These abilities will aid students as they take their places in a world dominated by change. These abilities will also aid students in their future endeavors as they encounter problems, whether in their personal or professional lives, or in their communities. Graduates of the College of Humanities and Sciences are broadly educated, not simply trained, allowing them to function as understanding participants in events rather than as spectators or even victims of those events.

To achieve this goal, the faculty of the College of Humanities and Sciences has identified the following specific requirements.

- Students should write well, organize their ideas, support them, and communicate them clearly and effectively.
- Students should reason logically and be able to quantify experiences.
- Students should have knowledge of the fundamental ideas and methods of the natural sciences.
- Students should be able to analyze ethical conflicts.
- They should have an understanding of literature and the other arts.
- Students should have a knowledge of our heritage and those of other cultures, along with an introduction to a foreign language.
- They should have a basic knowledge of human behavior and social, political, and cultural institutions.

Graduation Requirements

For students majoring in a four-year BA or BS degree program (including students in the pre-dental, pre-medical, pre-optometry, pre-veterinary and extended teacher preparation program classifications), there are four

areas of requirements that the student must complete for graduation:

1. Academic Campus General Education requirements (see Part VI of this *Bulletin*);
2. General Education requirements of the College of Humanities and Sciences (see departmental major sections for collateral requirements);
3. departmental major requirements; and
4. electives to complete the total of a minimum of 120 credits.

General Education Requirements of the College of Humanities and Sciences

In the following section, specific courses that fulfill general education requirements are described. Approved lists from which students must choose courses to complete particular requirements are also listed in this section.

Specific courses recommended by a department to fulfill one or more of the College of Humanities and Sciences General Education requirements are listed under the Degree Requirement heading in each departmental section. Students should check these listings.

Major or minor courses may fulfill General Education requirements when those courses appear among the following General Education requirements or on the approved lists of courses. However, no one course can be used to fulfill two General Education requirements, with the exception of courses used to meet the "writing intensive" or "urban environment" requirements.

All bachelor of arts and bachelor of science degree programs require students to complete a minimum of 120 credits. No more than four of those credits can be physical education/activity courses.

General Education Requirements for Bachelor of Arts and Bachelor of Science Degrees

The purpose of General Education courses in the College of Humanities and Sciences is to provide a foundation for lifelong learning among its students. This foundation includes the acquisition of information, the capacity and the propensity to engage in inquiry and critical thinking, the use of various forms of communication, an awareness of the diversity of human experience, understanding of the natural world, and appreciation of the responsibilities of people to themselves, to others, and to the community.

Level I: Skills and Competencies Requirements

1. Written Communication

Credits
8-12*

A. Composition and Rhetoric. ENG 101-200 or equivalent, with minimum of "C" grade in each course. All students who have not received credit for first semester freshman composition and rhetoric through AP, IB, dual enrollment, or a college course must enroll in ENG 101. ENG 200 is taken in the second semester of sophomore year.

B. Writing Intensive Requirement. Two Writing Intensive (WI) courses. Students must fulfill both of the following:

- i) One Writing Intensive course within the student's major. See "Approved List A" in the *Schedule of Classes* each semester.
AND
 ii) One writing intensive course from several alternatives or from the major. See "Approved List A" in the *Schedule of Classes* each semester.

The process of writing takes place in all disciplines. Specific sections of courses will be designated in a variety of disciplines that will provide students with opportunities for substantial writing while at the same time completing a major course or elective.

* This figure assumes 6 credits in ENG 101-200 and 2-6 credits in writing intensive courses.

2. Mathematical and Statistical Reasoning 3-6

Proficiency in mathematics through the level of algebra and one course in statistics as specified by the major department. (Check major departmental section of this *Bulletin*.)

A. **Mathematics.** Proficiency may be demonstrated through the Placement Test or acquired through completion of MAT 131 Introduction to Contemporary Mathematics or MAT 151 Precalculus Mathematics.

B. **Statistics.** One 3-credit course chosen from STA 208 Statistical Thinking or STA 210 Basic Practice of Statistics. Check departmental major section for required statistics course. MAT and CSC majors must take STA 212.

Students majoring in physics or the professional sequence in the chemistry major will have the statistics requirement fulfilled through required 300-level mathematics courses as specified by the major.

All students who have not started or completed the mathematics sequence in their curriculum must take the Mathematics Placement Test.

3. Critical Thinking 0

Critical thinking activities are incorporated in General Education courses. In addition, critical thinking activities will be embedded in specific parts of major curricula and courses.

4. Computer Literacy and Information Retrieval 0

Students should be able to understand basic computer concepts in order to accomplish a wide variety of tasks, including gathering information, organizing and analyzing data, synthesizing information, and communicating ideas.

All students must pass the computer literacy test prior to graduation through one of the following means:

- A. Complete the Computer Literacy Evaluation Test, through the Mathematical Sciences Department; or
- B. Successfully complete a 15-hour noncredit computer literacy module (which includes the Computer Literacy Test) to be offered periodically during the summer and academic year; or
- C. Successfully complete CSC 128 Computer Concepts and Applications (3 credits) or any other VCU course which prepares the student to take the Computer Literacy Evaluation Test; or
- D. An equivalent transfer course which prepares the student to take the Computer Literacy Evaluation Test.

Level II: Areas of Inquiry Requirements

5. Ethical Principles 3

One course in ethics either within the major or from another department (see "Approved List C")

6. Natural Sciences 7-9

Two natural science courses, one from the physical sciences and one from the biological sciences. One of the two courses must include a laboratory (see "Approved List D"). Check departmental major section of this *Bulletin* for required courses to fulfill this requirement.

7. Visual and Performing Arts 2-4

One course in the visual or performing arts (see "Approved List E")

8. Literature 3

One literature course (see "Approved List F")

9. Civilization 8-9

Courses dealing with the origins of the modern world, twentieth-century United States society, and the contemporary interdependent world.

Students must take one course (3 credits) from each of the following areas (9 credit total), but no more than 6 credits in any one discipline; or take two 4-credit interdisciplinary courses (8 credit total) that combine elements of A, B, and C below.

A. Historical and Cultural Origins (see "Approved List G")

B. American (United States) Studies (see "Approved List H")

C. Global Studies (see "Approved List I")

10. Foreign Language 0-8

Completion of a foreign language through the 102 level or equivalent course or by placement. **English, history, and political science majors require competency through the intermediate level (202 or 205) or 0-14 credits.** (Check with the Department of Foreign Languages for availability of the intermediate level of the language.)

Students may present American Sign Language courses in fulfillment of the foreign language requirement. Contact the Humanities and Sciences Academic Advising Office for the conditions of use.

A. Freshmen who wish to continue in their high school language will be given a placement test to determine the level at which they will begin language study for credit. Students desiring to begin study of a language different than the high school language need not take the placement test and may begin with the elementary (101) course for credit.

B. Students transferring from other colleges and universities with advanced placement (credit) or advanced standing through placement will receive credits as granted by the other institutions and should register for the next course in the sequence. Transfer students who have not begun foreign language study at the collegiate level and who wish to continue study with their high school language are subject to the provisions of the previous paragraph.

C. New freshmen and transfer students who qualify through the elementary level (102) of a foreign language on the placement test (or the 202 level for English, history, or political science majors) receive no semester credit but have satisfied the language requirement.

11. Human Behavior 4-6

Students must complete one of the following options:

A. Two courses (6 credits) in different disciplines focusing on human behavior (see "Approved List J")

OR

B. One 4-credit interdisciplinary course focusing on human behavior (see "Approved List J")

12. Urban Environment**3**

Students attending a public, urban university should have some understanding and appreciation of the urban environment, the challenges and opportunities that face cities today, and the influences of cities on human activities. The three-credit requirement dealing with aspects of modern urban life may be completed within the major, through General Education courses, or as an elective. With a few exceptions, the course will be taken at VCU during the last 60 credits (see "Approved List L").

Major Requirements

See departmental curriculum for exact number of credits. (30 credit minimum).

Elective Requirements

Elective courses to complete the total required 120 credits.

Approved Lists – Students Entering Fall 1997 and Thereafter**APPROVED LIST A – WRITTEN COMMUNICATIONS**

(See course descriptions in this *Bulletin* for any prerequisites.)

Freshman English

ENG 101 Composition and Rhetoric I

ENG 200 Composition and Rhetoric II (Taken in second semester of sophomore year.)

Writing Intensive Courses

At the time of printing, the list of writing intensive courses in the major is incomplete. Check with your departmental adviser or see the *Schedule of Classes* each semester for a more extensive listing.

ANT 301 Evolution:Man and Culture
 ANT/INT 348 South American Ethnography
 ANT/INT 349 Contemporary Cultures of Latin America
 ANT 425 Religion, Magic, and Witchcraft
 BIO L310 Laboratory in Genetics (.5 WI credit)
 BIO L312 Invertebrate Zoology Laboratory (.5 WI credit)
 BIO L321 Plant Development Laboratory
 BIO 392 Introduction to Research
 CHE L304 Physical Chemistry Laboratory
 CHE L409 Instrumental Analysis Laboratory
 CRJ 480 Senior Seminar in Criminal Justice
 ENG 385 Nature Writing
 ENS 490 Research Seminar in Environmental Studies
 HIS 490 Victorian England
 HIS 490 Sex and Gender in the Middle Ages
 HIS 490 Virginia in the Twentieth Century
 MAT 531 Expositions in Modern Mathematics
 PHI 301 Mind and Reality
 PHI 302 Reason and Knowledge
 PHI 320 Philosophy of Law
 PHI 335 Social and Political Philosophy
 PHI 490 Seminar in Philosophy
 PHI 490 Seminar in Philosophy (Personal Identity)
 POS 341 History of Political Thought
 POS/INT 365 International Political Economy
 PSY 317 Experimental Methods
 RST/ENG 361 Bible as Literature
 RST/PHI 412 Zen Buddhism
 USP 306 The Urban Economic Base
 WST 301 Feminist Theory

APPROVED LIST B – MATHEMATICS AND STATISTICS COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

MAT 131 Introduction to Contemporary Mathematics
 MAT 151 Precalculus Mathematics
 MAT 200 Calculus with Analytic Geometry
 STA 208 Statistical Thinking
 STA 210 Basic Practice of Statistics
 STA 212 Concepts of Statistics (for science majors only)

APPROVED LIST C – ETHICAL PRINCIPLES COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

MAC 290 Ethical Problems in the Mass Media
 PHI 211 History of Ethics
 PHI 212 Ethics and Applications
 PHI 213 Ethics and Health Care
 PHI 214 Ethics and Business
 RST 340 Global Ethics and the World's Religions
 SOC 445 Medical Sociology

APPROVED LIST D – NATURAL SCIENCES COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

Biological Sciences

BIO 101 Life Science
 BIO L101 Life Science Laboratory
 BIO 102 Science of Heredity
 BIO L102 Science of Heredity Laboratory
 BIO 103/ENS 103 Environmental Science
 BIO L103/ENS L103 Environmental Science Laboratory
 BIO 151 Introduction to Biological Science I (for BIO and other majors)
 BIO L151 Introduction to Biological Science Laboratory I (for BIO and other science majors)
 BIO 152 Introduction to Biological Science II (for BIO and other science majors)
 BIO L152 Introduction to Biological Science Laboratory II (for BIO and other science majors)

Physical Sciences

CHE 101 General Chemistry (for science majors)
 CHE L101 General Chemistry Laboratory (for science majors)
 CHE 110 Chemistry and Society
 CHE L110 Chemistry and Society Laboratory
 PHY 101 Foundations of Physics
 PHY L101 Foundations of Physics Laboratory
 PHY 107 Wonders of Technology and Laboratory
 PHY 291 Topics:Experiencing Science
 PHY 202 General Physics II (for science majors)
 PHY L202 General Physics II Laboratory (for science majors)
 PHY 208 University Physics II (for science majors)
 PHY L208 University Physics II Laboratory (for science majors)

APPROVED LIST E – VISUAL AND PERFORMING ARTS**A. Basic level courses designed specifically for non-arts majors.****Art Education**

AEN 121-122 The Individual in the Creative Process
 AEN 301-302 Art for Elementary Teachers
 AEN 340 Exploring the Visual Arts
 AEN 408 Two-Dimensional Art Experiences
 AEN 409 Three-Dimensional Art Experiences

Art Foundation

AFO 121-122 Introduction to Drawing
 Communication Arts and Design
 CDE 191 Studio Topics in Communication Arts and Design
 Dance and Choreography
 DAN 171,172 T'ai Chi
 DAN 183-184 Introduction to Modern Dance Technique
 DAN 313 Dance in Non-Western Cultures

Interior Design

IDE 103-104 Introductory Studio Course

Music

APM 191-192 Class Lessons in Piano

APM 193-194 Class Lessons in Voice

APM 195-196 Class Lessons in Guitar

MUC 111 MIDI Programming and Synthesis

MHT 105-106 Introduction to Writing Music

MHT 243 Music Appreciation

Painting and Printmaking

PAP 155-156 Drawing and Painting, Basic

Photography and Film

PTY 243-244 Photography

PTY 301 Mass Communications Photography

(offered for mass communications majors only)

Theatre

THE 107,108 Introduction to Stage Performance

B. Basic level courses open to both arts and non-arts majors.**Art Education**

AEN 250 Computer Graphics

AEN 353 Art and Perceptual Communication

AEN 420 The Related Arts in Education

Art History

ARH 103, 104 Survey of Western Art

ARH 145,146 Survey of Oriental Art

ARH 207 Introduction to Non-Western Art

ARH 270,271 History of the Motion Picture

Crafts

CRA 201-202 Metalsmithing

CRA 211-212 Jewelry

CRA 221 Woodworking Techniques

CRA 241 Ceramics: Handbuilding

CRA 242 Ceramics: Wheelthrowing

CRA 251, 252 Introduction to Glassworking

CRA 261, 262 Beginning Textiles

Dance and Choreography

DAN 105-106 Improvisation

DAN 107 Contemporary Dance Perspectives

DAN 111-112 Ballet Technique I

DAN 114,214,314, 414 Summer Dance Workshops

DAN/AAS 121,122 Tap Technique I

DAN/AAS 126, 127 African-Caribbean Dance I

DAN 141,142 Ballroom Dancing

DAN 243 Dynamic Alignment

DAN 291 Topics in Dance

DAN 308 Dance History

DAN 313 Dance in World Cultures

Fashion Design and Merchandising

FDE 290 Textiles for the Fashion Industry

FDE 319 Twentieth-Century Fashions

Music

APM 300-level Private Instruction: Principal and Secondary

Performing Mediums

APM 370 Large Ensembles (auditions required for some sections)

APM 390 Small Ensembles (auditions required for all sections)

MUC 112 Synthesizer and Composition

MHT 120 Introduction to Musical Styles

MHT/AAS 250 Introduction to African-American Music

MHT 280 Survey of Twentieth-Century American Popular Music

Photography and Film

PTY 233 Media Arts Survey

Sculpture

SCU 211, 212 Sculpture

Theatre

THE 103 Stagecraft

THE 104 Costume Construction

THE 211-212 Introduction to Drama

THE 221 and L221 Basic Scene Design and Laboratory

THE 229 Introduction to Lighting Design

THE 300 The Enjoyment of Theatre

THE/AAS 303 Black Theatre

C. Advance level courses open to both arts and non-arts majors. Some require special permission/audition.**Dance and Choreography**

DAN 221, 222 Tap Technique II

DAN 319, 320 Video/Choreography Workshop

DAN 343 Body Imagery

Sculpture

SCU 491 Topics in Sculpture

APPROVED LIST F - LITERATURE COURSES

ENG 201 Western World Literature I

ENG 202 Western World Literature II

ENG 203 British Literature I

ENG 204 British Literature II

ENG 205 American Literature I

ENG 206 American Literature II

ENG 215 Readings in Literature

ENG 216 Readings in Narrative

ENG 236/WST 236 Women in Literature

ENG 241 Shakespeare's Plays

ENG 291 Topics in Language or Literature

APPROVED LIST G - HISTORICAL AND CULTURAL ORIGINS COURSES

GEO 312/ANT 312 History of Human Settlement

HIS 101 Survey of European History I

HIS 102 Survey of European History II

HIS 105/AAS 105 Survey of African History I

HIS 106/AAS 106 Survey of African History II

HIS 107 Survey of Asian History I

HIS 108 Survey of Asian History II

HIS 109 Survey of Latin American History I

HIS 110 Survey of Latin American History II

PHI 103 Ancient Greek and Medieval Western Philosophy

PHI 104 Modern Western Philosophy

RST 311 Religions of the World I

RST 312 Religions of the World II

APPROVED LIST H - AMERICAN STUDIES (U.S.) COURSES

AMS 394 Perspectives in American Studies

HIS 103 Survey of American History I

HIS 104 Survey of American History II

POS 103 United States Government

RST 334 Religion in Contemporary America

APPROVED LIST I - GLOBAL STUDIES COURSES

GEO 307,308 World Regions

INT 330/SOC 330 Global Societies: Trends and Issues

POS 105/INT 105 International Relations

POS 365/INT 365 International Political Economy

SOC 430 Politics, Power, and Ideology

APPROVED LIST J - HUMAN BEHAVIOR COURSES

ECO 101 Introduction to Political Economy

GEO 102 Introduction to Cultural Geography

MAC 101 Mass Communications

PSY 101 Introduction to Psychology

SOC 101 General Sociology

SOC 340 Self and Society

SSC 340 Human Sexuality

WST 201 Introduction to Women's Studies

APPROVED LIST K - URBAN ENVIRONMENT COURSES(See course descriptions in this *Bulletin* for any prerequisites.)

ANT 391 Topics: Urban Anthropology

CRJ 181 Justice System Survey

CRJ 305 Policing Theories and Practice

CRJ 352 Crime and Delinquency Prevention

CRJ 468 Economic Offenses and Organized Crime
 ECO 321/USP 321 Urban Economics
 ENS 491 Topics:Ecology of Urban Environments
 FRE 301 Advanced Grammar and Writing
 GEO 311/ANT 311 History of Human Settlement
 HIS 490/ENG 427 Topics:Theater as History:Richmond During the
 Great Depression
 HUS 291 Topics:Discover Richmond
 MAC 303 General Assignment Reporting
 MAC 403 Advanced Reporting
 MAC 404 Specialized/Project Reporting
 MAC 439 PR Campaigns
 MAC 464 Electronic Media Writing III
 POS 321 Urban Government and Politics
 SLW 422 Social Welfare Legislation and Services
 SOC 302 Contemporary Social Problems
 SOC 327 Urban Sociology
 SPA 402 Language Issues in the Spanish-Speaking World
 USP 116 Introduction to the City
 USP 245 Housing and Community Revitalization
 USP 261 Design of the City
 USP 302/GEO 302 Land Use Capability
 USP 304 Urban Social Systems
 USP 306/GEO 306 The Urban Economic Base
 USP 310 Introduction to Public Planning
 USP 315 The Evolution of American Cities
 USP 316 Urban Life in Modern America
 USP 340/GEO 340/INT 340 World Cities Outside of North America
 USP 350/INT 350 Culture and Urbanism in Great Cities of the World
 USP 541 Urban Public Policy-Making Process
 Selected Fieldwork and Internship courses. Check with department
 chair and the *Schedule of Classes* for approved courses.

Approved Lists – Students Entering Prior to Fall 1997

APPROVED LIST A – EXPOSITORY WRITING COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

ENG 302 Legal Writing
 ENG 304 Advanced Composition
 ENG 327/BUS 327 Business and Technical Report Writing
 FRE 300,301 Advanced Grammar and Writing
 GER 300,301 Advanced Grammar and Writing
 MAC 303 General Assignment Reporting
 MAC 333 Public Relations Writing
 MAC 363 Electronic Media Writing I
 MAC 392 Advertising Copywriting
 SPA 300, 301 Advanced Grammar and Writing OR Two courses from
 other disciplines. See the *Schedule of Classes* each semester.

APPROVED LIST B – LITERATURE IN ENGLISH OR FOREIGN LITERATURE IN ENGLISH TRANSLATION OR UPPER-LEVEL 300-400 FOREIGN LITERATURE IN THE ORIGINAL LANGUAGE

(See course descriptions in this *Bulletin* for any prerequisites.)

Please note that this requirement calls for one of the two courses chosen to be in a literature prior to 1900. Such courses will be shown with an asterisk.

Students who have not previously taken a high school or college-level literature survey course may wish to fulfill this requirement with a sophomore-level survey course such as ENG 201 through 206. These courses will give students an extended survey of a number of works written over a relatively long period of time.

Students who have already taken survey courses may wish to fulfill this requirement with an upper-level course in English or foreign literature in English translation (FLT) or the original language excluding courses numbered 291,391 or 491 and ENG 351. These courses will give students a more intensive experience with the literature of a particular age, genre, or writer.

Literature in English (ENG)

English courses at the 200 level are recommended. However, any upper-level (300-400) literature courses excluding courses numbered 291,391 or 491 and ENG 351 offered by or cross listed with the English Department (excluding writing and linguistics courses) may be used to fulfill the requirement. ENG courses covering literature prior to the nineteenth century are ENG 201*, 203*, 205*, 241*, 320*, 321*, 322*, 335*, 361*, 371*, 372*, 400*, 401*, 402*, 403*, 407*, 409*, 410*, 411*, 414*, 415*, 416*, 423*, and 424*.

Foreign Literature in the Original Language

French (FRE)

330*,331 Survey of Literature
 430* The Middle Ages
 431* The Sixteenth Century
 432* The Seventeenth Century
 433* The Eighteenth Century
 434* The Nineteenth Century
 435 The Twentieth Century

German (GER)

330*,331 Survey of Literature
 416* Age of Goethe
 417* Intellectual Life and Culture in Nineteenth-Century Germany
 420 The Turn of the Century
 421 The Postwar German Scene

Spanish (SPA)

330* Survey of Spanish Literature
 331* Survey of Latin American Literature
 430 Literary Genres
 431* Literary Periods

(If using 330, 331, or 431 as prenineteenth-century courses, check with instructor to see that major emphasis of course is prenineteenth century.)

* Course content prior to the nineteenth century.

APPROVED LIST C – EUROPEAN HISTORY COURSES (HIS)

Bachelor of Science students may choose any of the courses shown on Lists 1 and 2 below. Also, in the sequences shown below, the first course is not a prerequisite for the second course. For example, a student may take HIS 316 prior to HIS 315.

Bachelor of Arts students must choose a sequence of courses from List 1. Bachelor of arts students may not use courses from List 2. Any two consecutively numbered courses from List 1 constitute a sequence. The two courses may be taken in any order.

History (HIS)

List 1

101,102 Survey of European History
 303 Greek Civilization
 304 Roman Civilization
 306 The Early Middle Ages
 307/RST 307 The High Middle Ages
 308 Europe in Renaissance
 309/RST 309 The Reformation
 310 Europe in Absolutism and Enlightenment,1648-1815
 311 The Zenith of European Power, 1815-1914
 312 The Age of Total War:Europe, 1914-1945
 313 Post-War Europe, 1945 to Present

List 2

315,316 History of France
 317,318 History of Germany
 319,320 History of England
 321,322 History of Russia
 323 History of Spain and Portugal
 325,326/RST 318, 319 History of the Jewish People
 327/RST 327 History of Christianity
 329,330 European Social History
 331 Nazi Germany
 336 Modern European Intellectual History
 337 The Origins of Modernism,1880-1930
 338 History of Socialism

APPROVED LIST D - AMERICAN HISTORY

Bachelor of science students may choose any of the courses shown on Lists 1 and 2 below. Also, in the sequences shown below, the first course is not a prerequisite for the second course. For example, a student may take HIS 352 prior to HIS 351.

Bachelor of arts students must choose a sequence of courses from List 1. Any two consecutively numbered courses from List 1 constitute a sequence. The two courses may be taken in any order.

History (HIS)

List 1

- 103,104 Survey of American History
- 342 Colonial America, 1585-1763
- 343 Two American Revolutions, 1763-1800
- 344 Antebellum American:1800-1860
- 345 Civil War and Reconstruction
- 346 The Emergence of Modern America,1877-1914
- 347,348 Twentieth-Century U.S. History

List 2

- 335 The American Jewish Experience
- 349,350 American Military History
- 351,352 History of the South
- 355 History of Virginia
- 357,358 American Social History
- 360 American Ethnic History
- 361,362/AAS 361, 362 Americans from Africa
- 363 History of the American Urban Experience
- 365,366 American Intellectual History
- 369,370 American Constitutional and Legal Development
- 374 History of the American Frontier
- 375,376 American Diplomatic History

APPROVED LIST E - EUROPEAN CULTURE AND HERITAGE COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

Art History (ARH)

- 103,104 Survey of Western Art

European Culture (EUC)

- 311 Classical Mythology
- 345/INT 345/USP 350 Culture and Urbanism in Great Cities of the World

French (FRE)

- 320,321 French Civilization and Culture I,II

Geography (GEO)

- 307 World Regions
- 334 Regional Geography of Europe

German (GER)

- 320,321 German Civilization I, II

History (HIS)

- 315,316 History of France
- 317,318 History of Germany
- 319,320 History of England
- 321,322 History of Russia
- 323 History of Spain and Portugal

Italian (ITA)

- 305 Italian Conversation and Civilization

International Studies

- 352/POS 352 European Government and Politics
- 354/POS 354 Politics of the Former Soviet Union

Philosophy

- 103 Ancient Greek and Medieval Western Philosophy
- 104 Modern Western Philosophy

Political Science (POS)

- 352/INT 352 European Governments and Politics
- 354/INT 354 Politics of the Former Soviet Union

Religious Studies (RST)

- 304 Introduction to Judaism
- 407 Modern Jewish Thought

Spanish (SPA)

- 320 Civilization of Spain I

APPROVED LIST F - NON-WESTERN CULTURE AND HERITAGE COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

African-American Studies (AAS)

- 105,106/HIS 105,106 Introduction to African History
- 200/ANT 200 Introduction to African Societies
- 204 Africa in Transition
- 333/GEO 333 Geography of Africa
- 356/POS 356/INT 356 African Government and Politics
- 357/POS 357/INT 357 Politics of Southern Africa
- 387/HIS 387 History of West Africa
- 388/HIS 388 Africa:Social,Cultural,and Economic History
- 389/HIS 389 History of Southern Africa
- 392/HIS 392 The Caribbean to 1838
- 393/HIS 393 Akenaton to Cleopatra

American Studies (AMS)

- 301 Introduction to Native American Studies

Anthropology (ANT)

- 103 Cultural Anthropology
- 200/AAS 200 African Culture
- 301 The Evolution of Man and Culture
- 304/SOC 304/WST 304 The Family
- 305 Comparative Society
- 350/INT 350 Peoples and Cultures of the World
- 425 Religion,Magic, and Witchcraft

Geography (GEO)

- 308 World Regions
- 333/AAS 333 Geography of Africa

History (HIS)

- 105,106/AAS 105,106 Survey of African History
- 107,108 Survey of Asian History
- 109,110 Survey of Latin American History
- 301,302/RST 315, 316 The Ancient Near East
- 328 Modern Middle East
- 378 History of Central America
- 379 The History of Modern Japan
- 381 The Qing Dynasty
- 382 China:The Twentieth Century
- 384 Latin America and World Affairs
- 385 History of Mexico
- 386 History of Brazil
- 387/AAS 387 History of West Africa
- 388/AAS 388 Africa:Social,Cultural,and Economic History
- 389/AAS 389 History of South Africa
- 392/AAS 392 The Caribbean to 1838
- 393/AAS 393 Akenaton to Cleopatra

Philosophy (PHI)

- 408/RST 408 Indian Tradition
- 410/RST 410 Chinese Tradition in Philosophy
- 412/RST 412 Zen Buddhism

Political Science (POS)

- 351/INT 351 Governments and Politics of the Middle East
- 353/INT 353 Latin American Governments and Politics
- 355/INT 355 Asian Governments and Politics
- 356/AAS 356/INT 356 African Government and Politics
- 357/AAS 357/INT 357 Politics of Southern Africa
- 452/INT 452 Seminar in the Politics of Developing Areas

Religious Studies (RST)

- 311 World Religions
- 315,316/HIS 301,302 The Ancient Near East
- 317 Islam
- 320 Taoism
- 408/PHI 408 Indian Tradition
- 410/PHI 410 Chinese Tradition in Philosophy
- 412/PHI 412 Zen Buddhism

Sociology (SOC)

- 304/ANT 304/WST 304 The Family

Spanish (SPA)

- 321 Latin American Civilization I

Women's Studies (WST)

- 304/ANT 304/SOC 304 The Family

APPROVED LIST G – PARTICIPATORY AND NONPARTICIPATORY ARTS COURSES

Courses fulfilling this requirement are divided into participatory and nonparticipatory courses. Participatory courses are those primarily devoted to perfection of an artistic skill through studio work. Nonparticipatory courses are those primarily lecture and content oriented, with little or no studio work required, such as history of an art, art criticism, aesthetics, or music appreciation.

Participatory Courses

Art Education (AEN)

- 121-122 The Individual in the Creative Process
- 301 Art for Elementary School Teachers
- 340 Exploring the Visual Arts
- 353 Art and Perceptual Communication
- 408 Two-Dimensional Arts Experiences
- 409 Three-Dimensional Art Experiences
- 420 The Related Arts in Education

Art Foundation (AFO)

- 101-102 Communication and Presentation
- 121-122 Introduction to Drawing

Communication Arts and Design (CDE)

- 191 Studio Topics in Communication Arts and Design

Crafts (CRA)

- 201-202 Metalsmithing
- 211-212 Jewelry
- 221 Woodworking Techniques
- 241 Ceramics: Handbuilding
- 242 Ceramics: Wheelthrowing
- 251,252 Introduction to Glassworking
- 261,262 Beginning Textiles

Dance and Choreography (DAN)

- 105-106 Improvisation
- 111-112 Ballet Technique I
- 113 Ballet Technique I^Δ
- 114 Summer Dance Workshop
- 121,122/AAS 121, 122 Tap Technique I
- 126,127/AAS 126, 127 African-Caribbean Dance I
- 141,142 Ballroom Dancing
- 171,172 T'ai Chi
- 183 Introduction to Modern Dance Technique
- 211-212 Ballet Technique II^Δ
- 221 Tap Technique II
- 243 Dynamic Alignment
- 251 Jazz Technique II^Δ
- 311-312 Ballet Technique III^Δ
- 313 Dance in Non-Western Cultures*
- 319,320 Video/Choreography Workshop[†]
- 343 Body Imagery*

* Recommended for upper-level students; dance experience not required.

[†] Recommended for upper-level students with some experience in dance, film, video, or photography.

^Δ Open to non-dance majors who pass placement audition.

English (ENG)

- 305 Creative Writing: Genres
- 426/THE 426 Playwriting
- 435 Creative Writing: Poetry
- 437 Creative Writing: Fiction

Interior Design (IDE)

- 103-104 Introductory Studio Course

Music (APM)

- 191-192 Class Lessons in Piano
- 193 Class Lessons in Voice
- 195 Class Lessons in Guitar
- 301-349 300-level Private Instruction: Principal and Secondary Performing Mediums
- 370 Large Ensembles*
- 390 Small Ensembles[†]

Music History, Literature and Theory (MHT)

- 105-106 Introduction to Writing Music
- 120 Introduction to Musical Styles
- 243 Music Appreciation

- 250/AAS 250 Introduction to African-American Music
- 280 Survey of Twentieth-Century American Popular Music
- 350/AAS 350 Studies in the Music of the African Continent and Diaspora

Music Composition (MUC)

- 111 Programming and Synthesis
- 112 Synthesizer and Composition

* Auditions required for Orchestra, University Band, Symphonic Wind Ensemble, Commonwealth Singers. No audition required for Choral Arts Society.

[†] Audition required.

Painting and Printmaking (PAP)

- 155-156 Drawing and Painting, Basic

Photography and Film (PTY)

- 233 Media Arts Survey
- 243-244 Photography
- 245 Design Photography I
- 301 Mass Communications Photography
- 305-306 The Zone System*
- 341-342 Concepts in Photography
- 345 Design Photography II*
- 350 Intermediate Photography*

* Prerequisite required.

Sculpture (SCU)

- 211,212 Sculpture

Theatre (THE)

- 103 Stagecraft
- 104 Costume Construction
- 107,108 Introduction to Stage Performance
- 221 Basic Scene Design
- 229 Introduction to Lighting Design
- 325 Stage Management

Nonparticipatory Courses

Art History (ARH)

- 103,104 Survey of Western Art
- 145,146 Survey of Oriental Art
- 207 Introduction to Non-Western Art
- 270,271 History of the Motion Picture
- 300 Prehistoric and Ancient Art and Architecture
- 301 Art and Architecture of Ancient North America
- 305 Classical Art and Architecture
- 315 Renaissance Art and Architecture
- 316 Northern Renaissance Art and Architecture
- 317,318 History of Architecture
- 320 Baroque and Rococo Art and Architecture
- 325 Nineteenth-Century Art and Architecture in Europe
- 330 Twentieth-Century Art and Architecture
- 442 Architecture in Richmond
- 443 Folk Art of the United States
- 444 Studies in the Art of the United States
- 445 The Art of India
- 447 The Art of Southeast Asia
- 449 Studies in Asian Art
- 450 Art and Architecture of Mesoamerica
- 451 Art and Architecture of Andean America
- 452 Studies in Pre-Columbian Art and Architecture
- 454 Studies in African and Oceanic Art
- 455 Aesthetics and Modern Theories of Art
- 456 Ideas and Criticism in Art
- 457/WST 457 Women, Art and Society
- 459 Studies in Aesthetics, Theory, and Criticism of Art
- 470 History of Animated Feature Film
- 471 Film Theory
- 472 History of Photography
- 474 Studies in Film
- 489 Topics in Advanced Art History

Communication Arts and Design (CDE)

- 252 Twentieth-Century Visual Communications I

Dance and Choreography (DAN)

- 307-308 Dance History

Fashion Design and Merchandising (FDE)
 290 Textiles for the Fashion Industry
 319 Twentieth-Century Fashions

Interior Design (IDE)
 251-252 Design in Historic Interiors and Architecture

Music History, Language and Theory (MHT)
 380 Survey of Music the Industry

Photography and Film (PTY)
 374 Film Pre-Production and Post-Production

Theatre (THE)
 211-212 Introduction to Drama
 300 The Enjoyment of Theatre
 303/AAS 303 Black Theatre
 307-308 History of the Theatre
 309-310 History of Costumes
 403,404 History of Dramatic Literature

APPROVED LIST H - ETHICS COURSES

(See course descriptions in this *Bulletin* for any prerequisites.)

Mass Communications (MAC)
 290 Ethical Problems in the Mass Media

Philosophy (PHI)
 211 History of Ethics
 212 Ethics and Applications
 213 Ethics and Health Care
 327 Ethical Theory

Political Science (POS)
 341 History of Political Thought I

Religious Studies (RST)
 340 Global Ethics and the World's Religions

APPROVED LIST J - HUMAN BEHAVIOR AND INSTITUTIONS

(see course descriptions in this *Bulletin* for any prerequisites)

African-American Studies (AAS)
 103 Introduction to African-American Studies
 104/SOC 104 Sociology of Racism
 305/SOC 305/WST 305 Sociology of the Black Family
 307/RST 307 Black Religion
 311/USP 337 Urbanization and Blacks:A Cross-Cultural Comparison
 318/POS 318/WST 318 Politics of Race, Class, and Gender
 322/PSY 322 Personality and Behavior of the African-American
 343/POS 343 Black Political Thought

Anthropology (ANT)
 ANT 103 Cultural Anthropology is a prerequisite for many ANT courses and is recommended as the basic course. With completion of any prerequisites, the following are recommended:
 301 The Evolution of Man and Culture
 311/GEO 311 History of Human Settlement
 350/INT 350 Peoples and Cultures of the World

Economics (ECO)
 203 Introduction to Economics
 210-211 Principles of Economics
 With completion of prerequisites, the following are recommended:
 306 Public Finance – Federal
 310 Economics and Poverty
 321 Urban Economics
 421 Government and Business
 431 Labor Economics

Education (EDU)
 300 Foundations of Education
 301 Human Development and Learning

Geography (GEO)
 102 Introduction to Cultural Geography
 311,312/ANT 311, 312 History of Human Settlement
 322 World Political Geography

Political Science (POS)
 103 U.S. Government and 201 Introduction to Politics are recommended as basic courses. However, all POS courses may be used to fulfill this requirement excluding the following:POS 214,320,331, 334,432,448,494, 498,and 499.

Psychology (PSY)
 101 Introduction to Psychology is a prerequisite for all upper-level PSY courses and is recommended as the basic course. With the completion of this prerequisite, all PSY 300 and 400-level courses may be used to fulfill this requirement excluding the following courses:PSY 317, 318,415,492,and 498-499.

Religious Studies (RST)
 101 Introduction to Religious Studies
 301 Introduction to the Old Testament
 302 Introduction to the New Testament
 307/AAS 307 Black Religion
 311,312 Religions of the World
 334 Religion in Contemporary America
 360/SOC 360 Sociology of Religion

Sociology (SOC)
 101 General Sociology is a prerequisite for many SOC courses and is recommended as the basic course. With the completion of any prerequisites, all SOC courses may be used to fulfill this requirement excluding the following courses: SOC 214, 319, 320,421, 492, and 493.

Social Science (SSC)
 303 Marriage and Family Relationships
 330 The Psychology and Sociology of Death
 340 Human Sexuality

Women's Studies (WST)
 201 Introduction to Women's Studies
 304/ANT 304/SOC 304 The Family
 305/AAS 305/SOC 305 Sociology of the Black Family
 318/AAS 318/POS 318 Politics of Race, Class and Gender
 333/SOC 333 Sociology of Sex and Gender
 334/SOC 334 Sociology of Women
 335/PSY 335 Psychology of Women

Humanities and Sciences Undeclared Program

Exploratory Programs for Students with an Undeclared Major

Marcia Zwicker
 Coordinator

For those students seeking admission to VCU who have not declared their major at the time of their acceptance or enrollment, the University recommends that these students enroll in the College of Humanities and Sciences. Students admitted into the "Humanities and Sciences Undeclared" category are encouraged to select a major by the end of two years of study. Students must declare a major within one of the University's schools no later than the semester in which they complete 60 credits. The advising program is flexible enough to suit the interests of any student with an undeclared major, yet the courses recommended are basic to a variety of majors.

The student with an undeclared major is assigned an adviser in the Office of Academic Advising with whom the student must meet at least once prior to advanced registration each semester. Adviser and student assess the general academic direction of the student's interests and then plan a program of studies to assist the student in defining his or her academic objectives more clearly.

The following lists freshman and sophomore level courses from which undeclared students can choose to explore various fields.

As students who have not declared their majors begin to make decisions about a major, they should consult this *Bulletin* for that major's specific course requirements that should be taken in the freshman and sophomore years.

Suggested Courses for Humanities and Sciences Undeclared Students Among Various Schools

A. Most Transferable Courses

ENG 101-200 Composition and Rhetoric
 HIS 101, 102 Survey of European History
 HIS 103, 104 Survey of American History
 ENG 201 Western World Literature I
 ENG 202 Western World Literature II
 ENG 203 British Literature I
 ENG 204 British Literature II
 ENG 205 American Literature I
 ENG 206 American Literature II
 PSY 101 Introduction to Psychology
 SOC 101 General Sociology
 SPE 121 Effective Speech
 PHY 107 Wonders of Technology (non-science)
 PHY 207-208 and L207, L208 University Physics and Laboratories (science majors)
 BIO 151,152 and L151,L152 Introduction to Biological Sciences and Laboratories (science majors)
 BIO 101, L101 Life Science and Laboratory (non-science)
 BIO 102, L102 Science of Heredity and Laboratory (non-science)
 BIO 103/ENS 103, L103 Environmental Science and Laboratory (non-science)
 CHE 101-102 and L101-L102 General Chemistry and Laboratory (science majors)
 CHE 110,L110 Chemistry and Society and Laboratory (non-science)
 MAT 131 Introduction to Contemporary Mathematics (placement test required)
 MAT 151 Precalculus Mathematics (placement test required)
 POS 105/INT 105 International Relations

B. Second Level of Most Transferable Courses

POS 103 U.S. Government
 ARH 103, 104 Survey of Western Art
 AAS 103 Introduction to African-American Studies
 PHI 103 Ancient Greek and Medieval Western Philosophy
 PHI 104 Modern Western Philosophy
 PHI 221 Critical Thinking
 PHI 222 Logic

If School is Probably Arts (see Part X for additional information)

ENG 101-200 Composition and Rhetoric
 AFO 121-122 Introduction to Drawing
 ARH 103-104 Survey of Western Art
 CRA 201-202 Metalsmithing
 CRA 211-212 Jewelry
 CRA 241-242 Handbuilding and Wheelthrowing
 CRA 261-262 Beginning Textiles
 FDE 190 Introduction to the Apparel Industry
 FDE 240 Introduction to Fashion Merchandising
 FDE 290 Textiles for the Fashion Industry
 FDE 319 Twentieth-Century Fashions
 IDE 103-104 Introductory Studio Course
 IDE 211 Introduction to Interior Design
 PAP 155-156 Drawing and Painting, Basic
 PAP 255-256 Drawing and Painting, Basic
 PAP 355-356 Drawing and Painting, Intermediate
 THE 307-308 History of the Theatre
 300-Level Private Instruction
 APM 165-166 Aural Skills
 APM 191-192 Class Lessons in Piano
 APM 193-194 Class Lessons in Voice
 APM 195-196 Class Lessons in Guitar
 APM 197-198 Class Lessons in Organ
 APM 370 Large Ensembles
 APM 390 Small Ensembles
 MHT 105-106 Fundamentals of Music Theory
 MHT 117 Computers in Music
 MHT 201 Acoustics

If College is Probably Humanities and Sciences (see Part VIII for additional information)

ANT 103 Cultural Anthropology
 ENG 101-200 Composition and Rhetoric
 Foreign Language (placement test required if continuing in high school language)
 HIS 101, 102 Survey of European History
 HIS 103, 104 Survey of American History
 HIS 105, 106/AAS 105,106 Survey of African History
 HIS 107,108 Survey of Asian History
 HIS 109, 110 Survey of Latin American History
 Laboratory Science – one biological science course and one physical science course with a laboratory in one of the two. PHY 107 Wonders of Technology, PHY 101 Foundations of Physics CHE 110 Chemistry and Society, BIO 151 Introduction to Biological Sciences (if planning BIO major), BIO 101 Life Science, BIO 102 Science of Heredity, BIO/ENS 103 Environmental Science, CHE 101 and laboratory (for science majors)
 MAT 131 Introduction to Contemporary Mathematics or MAT 151 Precalculus Mathematics (placement test required)
 PHI 103 Ancient Greek and Medieval Western Philosophy
 PHI 104 Modern Western Philosophy
 POS 103 U.S. Government
 POS 201 Introduction to Politics
 PSY 101 Introduction to Psychology
 RST 101 Introduction to Religious Studies
 SOC 101 General Sociology

If School is Probably Business (see Part XI for additional information)

ENG 101-200 Composition and Rhetoric
 BUS 121 The Business Environment
 BUS 171 Mathematical Applications for Business (placement test required and MAT 141 may be required as prerequisite)
 BUS 203-204 Introduction to Accounting
 BUS 212 Differential Calculus and Optimization for Business (placement test required)
 ECO 210-211 Principles of Economics
 SPE 121 Effective Speech
 Elective in history or political science
 A natural science elective
 Elective in sociology, psychology, or anthropology
 Elective in the arts

If School is Probably Education (see Part XIII for additional information)

CSC 128 Computer Concepts and Applications
 ENG 101-200 Composition and Rhetoric
 ENG 200-Level Literature
 MAT 131 Introduction to Contemporary Mathematics OR
 MAT 141 Algebra With Applications
 STA 208 Statistical Thinking
 HED/PHE 190 History and Philosophy of Physical Education
 HIS 103 Survey of American History
 PSY 101 Introduction to Psychology
 SOC 101 General Sociology
 BIO 101,L101 Life Science and Laboratory
 SPE 121 Effective Speech

If School is Probably Social Work (see Part XIX for additional information)

ANT 103 Cultural Anthropology
 ENG 101-200 Composition and Rhetoric
 BIO 101, L101 Life Science and Laboratory
 MAT 131 Introduction to Contemporary Mathematics OR
 MAT 141 Algebra With Applications
 STA 208 Statistical Thinking or STA 210 Basic Practice of Statistics
 PSY 101 Introduction to Psychology
 SOC 101 General Sociology
 Social/behavioral science electives, 6 hours (political science, economics, history)
 Electives, 6 hours

Undergraduate Credit by Examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the College of Humanities and Sciences provides students limited opportunities to

accelerate their education through “credit by examination.” A full description of this program appears in Part II of this *Bulletin*.

University Honors Program

The Virginia Commonwealth University Honors Program, a challenging and exciting program with high academic standards, was established to meet the needs of academically talented undergraduate students. The University Honors Program offers students the opportunity to expand their creative and intellectual horizons. Students in this program benefit from small classes which promote greater interaction between students and faculty and among the students themselves.

Undergraduates from the College of Humanities and Sciences and all other schools on VCU's Academic Campus are invited to apply to this program, if they meet eligibility requirements. For a detailed description of qualifications and requirements, see Part II of this *Bulletin*.

Course Descriptions and Numbering

Courses designated 100 and 200 are undergraduate lower-level courses offered primarily to undergraduate students; 300 and 400 courses are undergraduate upper-level courses designed for advanced undergraduates.

Courses at the 500 level are open to advanced undergraduate students with the consent of the department offering the course. Credit is applicable to only one degree.

Courses in the College of Humanities and Sciences

CHS 190 College Seminar. 1 lecture hour. 1 credit. A seminar designed for first-year programs coordinated through the Office of the Dean of the College of Humanities and Sciences. Designed to help students integrate general education courses. Open only to students who participate in these programs. May be repeated once for credit.

CHS 491 College Topics. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Open primarily to seniors; others with permission of instructor. A discussion of complex issues that are of enduring value or of critical interest to society. The goals of the course are to (1) bring general principles from disciplinary or a variety of disciplinary contexts to bear on specific problems; (2) exercise critical thinking; (3) understand and integrate diverse perspectives; and (4) explore models of decision making, underlying assumptions, and implications. See the *Schedule of Classes* for specific issues to be offered each semester.

Courses in Humanities and Sciences

HUS 291 Special Topics in the Humanities and Sciences. Semester course; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Grade Option: P/F or Normal Letter Grading. Option will be established by instructor.

HUS 391 Special Topics in the Humanities and Sciences. Semester course; variable; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or pro-

gram. May be multidisciplinary. Grade Option: P/F or Normal Letter Grading. Option will be established by instructor.

Course in University Studies

UNS 291 Interdisciplinary Topics. Semester course; variable; 1-4 credits per semester. Maximum total of eight credits in all University studies courses. An interdisciplinary course designed to give the student an overview of a topic not associated with a particular discipline.

School of Mass Communications

June Orr Nicholson

Acting Director and Associate Professor (1984) BA 1968 University of North Carolina, Chapel Hill; MA 1979 American University

- Brennen, Bonnie S. (1996) *Assistant Professor* BA 1974 California State University at Northridge; PhD 1993 University of Iowa
- Campbell, John W., Jr. (1995) *Assistant Professor* BS 1987 and MS 1989 Virginia Commonwealth University
- Chumley, Timothy H. (1994) *Assistant Professor; VCU Adcenter* BFA 1983 Southern Methodist University
- Cook-Tench, Diane M. (1991) *Associate Professor and Director; VCU Adcenter* BFA 1976 Minneapolis College of Art and Design
- Cotzias, Constantin G. (1996) *Associate Professor* BA 1975 Gettysburg College; MBA 1977 New York University
- Crutchfield, George T. (1970) *Professor* BS Florida Southern College; MS 1959 Florida State University; PhD Florida Southern College
- Donohue, Thomas R. (1989) *Professor* BA 1967 and MA 1968 Bowling Green State University; PhD 1972 University of Massachusetts, Amherst
- Kenamer, J. David (1982) *Associate Professor and Director of International and Area Studies Program* BA 1972 and MA 1978 University of Kentucky; PhD 1982 University of Wisconsin
- Lavery, Roger M. (1996) *Associate Professor; VCU Adcenter* BA 1971 University of Notre Dame; MS 1972 University of Illinois
- Looney, James R. (1964) *Associate Professor* BS 1962 East Tennessee State University; MS 1965 Virginia Commonwealth University
- Marbury, Alicia Kaye (1994) *Instructor* BS Virginia Commonwealth University
- Smith, Ted J., III (1987) *Associate Professor* BA 1971, MA 1972 and PhD 1978 Michigan State University
- Thomas, Clarence W. (1991) *Associate Professor* BA 1976 Hampton Institute; MS 1977 Syracuse University; PhD 1990 University of Florida
- Torchia, Augustus G. (1993) *Collateral Associate Professor; VCU Adcenter* BFA 1961 University of Florida
- Wirt, Wilma H. (1987) *Associate Professor* BA 1958 Oklahoma State University; MA 1977 University of Texas

Emeriti Faculty

Arnold, Edmund C. *Professor Emeritus* AB Michigan State University; LHD Hartwick College

The School of Mass Communications prepares students for careers in the mass media and related fields and encourages high standards of ethical and journalistic performance. The prescribed courses in the school provide a broad educational base and instruct the students in the techniques of mass communications.

The School of Mass Communications offers a Bachelor of Science degree in mass communications with specialization in four sequences.

The **News Editorial Sequence** is designed primarily for students planning careers in newspaper writing or editing.

The **Advertising Sequence** prepares students for careers in advertising departments of manufacturers and retailers, advertising agencies and advertising media, and advertising service organizations. Students choose one of two tracks – Business or Creative.

The **Public Relations Sequence** is designed to prepare students for employment in industry, government, nonprofit associations, and public relations agencies.

The **Electronic Media Sequence** prepares students for careers in electronic journalism or production.

Degree Requirements

Bachelor of Science in Mass Communications.

The Bachelor of Science curriculum in mass communications requires a minimum of 120 credits with at least 33 but no more than 36 credits in the major field. The school is divided into a lower division (freshman and sophomore) and an upper division (junior and senior).

Only three courses in the major – MAC 101 Mass Communications, MAC 203 Newswriting, and MAC 290 Ethical Problems in Mass Communications – can be taken in the lower division.

To enroll in MAC 203, students must successfully complete a language skills test and type at least 35 words per minute. Proof of typing skills are established by examination or completion of a college-level typing course with a grade of “C” or better.

Admittance to the upper level is contingent on meeting the following requirements: a GPA of at least 2.25 in all courses, completion of MAC 101, MAC 203, and MAC 290 with at least a grade of “C”, and completion of the following courses: ENG 101- 200, HIS 103-104, ECO 210-211, MAT 131 and STA 208 or 210, POS 103, completion of the College laboratory science requirement, and a foreign language (6-8 credits).

Certification of these requirements must accompany a formal petition for admission to the upper division of this program. At that time the student must select an area of specialization in mass communications.

To enroll in a mass communications course, majors must have earned at least a “C” in all courses prerequisite for that course.

Mass communications majors must maintain a 2.25 GPA in all VCU course work and a 2.25 in the major to graduate.

Transfer students with junior standing admitted to VCU are placed on one-semester probation to establish the required GPA before admission to the upper division.

Students admitted to the upper division must choose one of the following concentrations:

Advertising

MAC 300 Media Graphics
MAC 380 Introduction to Advertising
MAC 392 Advertising Copywriting
MAC 481 Advertising Campaigns

Business Track

MAC 408 Communications Law
MAC 480 Media Strategy
MAC 493 Fieldwork/Internship
MAC Writing Elective (3 credits)
MAC Elective (3 credits)

Creative Track

MAC 393 Creativity for Television
MAC 394 Advertising Layout and Production
MAC 450 Advertising Portfolio Development
MAC Electives (4-6 credits)

Public Relations

MAC 300 Media Graphics
MAC 323 Public Relations
MAC 333 Public Relations Writing
MAC 335 Public Relations Presentations
MAC 408 Communications Law
MAC 425 Public Relations Research
MAC 439 Public Relations Campaigns
MAC 493 Fieldwork/Internship (1-3 credits)
MAC elective* (3 credits)

* Recommended elective – MAC 380 Introduction to Advertising

News-Editorial

MAC 300 Media Graphics
MAC 303 General Assignment Reporting
MAC 305 Copy Editing
MAC 375 Legislative Reporting
MAC 405 Advanced Editing
MAC 408 Communications Law
MAC electives (3-6 credits)
And choose 6 hours from the following:
MAC 403 Advanced Reporting
MAC 404 Specialized/Project Reporting
MAC 475 Capital News Service

Electronic Media

MAC 361 History and Development of Broadcasting
MAC 363 Electronic Media Writing I
MAC 365 Radio Production
MAC 366 Television Production
MAC 408 Communications Law
MAC 463 Electronic Media Writing II
MAC 464 Electronic Media Writing III
MAC 493 Fieldwork/Internship (1-3 credits)
And choose 4-9 hours from the following:
MAC 362 Newscasting
MAC 393 Creativity for Television
MAC 414 Advanced Radio Production
MAC 415 The Television Studio: Advanced Television Production
MAC 461 The Documentary
MAC 492 Independent Study

Collateral Requirements

In addition to mass communications courses and the collateral courses for the tracks listed below, students must take the following:

Any two history courses
Any two literature courses
CSC 128 Computing Applications and Concepts
One 3-credit course from the following:
POS 303 Political Attitudes and Behavior
POS 310 Public Policy
POS 311 Politics of the Environment
POS 314 U.S. Constitutional Law
POS 315 Judicial Policy Making
POS 321 Urban Government and Politics
POS 322 State and Local Government and Politics
POS 331 Public Administration
POS 341 History of Political Thought
POS 365 International Political Economy
POS 409 Continuity and Change in American Politics
POS 420 Seminar in Urban Politics
POS 425 Public Policy in the States
USP 304 Urban Social Systems
USP 310 Introduction to Public Planning
USP 315 The Evolution of American Cities
USP 316 Urban Life in Modern America
USP 340/GEO 340/INT 340 World Cities Outside of North America
USP 350 Culture and Urbanism in Great European Cities

Collateral requirements for the tracks include the following:**Advertising**

BUS 308 Introduction to Marketing

Public Relations

BUS 308 Introduction to Marketing

BUS 319 Organizational Behavior

BUS 320 Production/Operations Management

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing an undergraduate degree in mass communications. A full description of the program appears in Part XX of this *Bulletin*.

Courses in Mass Communications

MAC 101 Mass Communications. Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. A broad survey of mass media, with emphasis on new media, global media and the business of media as traditional lines blur among journalism, advertising and public relations. The history and evolution of mass media are examined. Emphasis is given to mass media law and ethics, including the origins and evolution of a free press and the legal framework of contemporary mass media practice.

MAC 181 Principles of Advertising. Semester course; 3 lecture hours. 3 credits. A survey of all forms of advertising; principles of layout copy; production methods; campaign preparation; media selection. (Not open to Mass Communications majors.)

MAC 203 Newswriting. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: ENG 101, sophomore standing, type-writing proficiency of 35 words per minute and successful completion of a language skills test. Study and practice in fact gathering and development of the basic skills needed for writing for the media. Course will focus on newspaper writing and will stress grammar skills. Students must obtain permission to register from the School of Mass Communications office.

MAC 290 Ethical Problems in Mass Media. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAC 101 or permission of school. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice. Students are required to design and justify resolutions to the issues and present defenses for the resolution proposals.

MAC 101 and MAC 203 are prerequisites for the following courses.

MAC 300 Media Graphics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. For MAC majors only. A course on the functions of visual and graphic communication in the print and electronic media. Course focuses on creative typographic and layout design, editing, pictures, and nonverbal elements of communications and perception, and integrates computer software packages such as PageMaker, Quark and others.

MAC 303 General Assignment Reporting. Semester course; 2 lecture and 3 laboratory hours. 3 credits. For MAC majors only. Detailed study in gathering and reporting facts, with emphasis on clarity and maturity of writing. The intent is to build skills in interviewing, to provide practice in writing general news and features, and to prepare for entry-level reporting assignments.

MAC 305 Copy Editing. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MAC 300. For MAC majors only. Instruction and practice in basic newspaper editing with a focus on practical experience in editing local and news service copy for publication. Includes emphasis on headline writing, development of news judgment, accuracy and fairness while exposing students to legal problems

confronting a copy editor. Some attention will be paid to layout and design of newspapers.

MAC 323 Public Relations. Semester course; 3 lecture hours. 3 credits. For MAC majors only. Study of public relations principles and practices, including analysis of tools, media, ethical responsibilities and emerging technologies. Special attention to the theory and research literature on rational and ethical persuasion.

MAC 333 Public Relations Writing. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 323. For MAC majors only. An intensive writing course focusing on researching and writing materials in support of the public relations function. Practice in preparing materials for controlled and uncontrolled media, both print and broadcast, including news releases, interview protocols, special events background materials, media kits, employee newsletters, community relations materials and formal public speaking scripts. Explores routine, special event and crisis situations, and the link between written and audiovisual documents.

MAC 335 Public Relations Presentations. Semester course; 2 lecture and 1 laboratory hour. 2 credits. Prerequisite: MAC 333. For MAC majors only. Instruction and practice in broadcast and computerized public relations production methods, and special events planning and implementation.

MAC 341 Feature and Article Writing. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAC 303 or 363 or permission of instructor. For MAC majors only. Practice in preparing articles and features for newspapers and magazines. Emphasis is on creative journalistic writing and development of writing skills.

MAC 361 History and Development of Broadcasting. Semester course; 3 lecture hours. 3 credits. For MAC majors only. An examination of the regulatory, technical, economic and creative foundations of the broadcast media. Historical, contemporary, and ethical issues in broadcasting are also addressed.

MAC 362 Newscasting. Semester course; 2 lecture and 2 laboratory hours. 2 credits. Prerequisite: MAC 363. For MAC majors only. Concentrates on developing on-air skills in radio and television studio and field situations. Emphasizes journalistic principles in delivery of news, public affairs, editorial and interviews. Grammar, diction and broadcast writing are stressed.

MAC 363 Electronic Media Writing I. Semester course; 3 lecture hours. 3 credits. For MAC majors only. Students will concentrate on developing writing and reporting skills for radio and television. Weekly writing assignments. Students will write the following for radio: a wrap, a person on the street, a two-part series. Students will write the following for television: an anchor voice over, a voice over sound on tape, and a package with reporter stand-up. MAC 363 to be taken concurrently with MAC 365 and MAC 366.

MAC 365 Radio Production. Semester course; 3 laboratory hours. 1 credit. For MAC majors only. Students will learn the purpose, function, and execution of basic techniques of radio and audio field and studio production operations. Emphasis will be placed on the production of broadcast-quality audition tapes. Fieldwork production, remote production, and live production. Radio production, organization structure, individual roles, and the one-person newsroom will also be covered.

MAC 366 Television Production. Semester course; 3 laboratory hours. 1 credit. For MAC majors only. Students will learn the purpose, function and execution of basic techniques of television and video field and studio production operations. Emphasis will be placed on the production of broadcast-quality audition tapes. Fieldwork production, remote production, live production. Television production, organizational structure, individual roles and the one-person television crew will also be covered.

MAC 375 Legislative Reporting. Semester course; 1 laboratory hour. 1 credit. Prerequisite: MAC 303 or 363. For MAC majors only. Concentrated five-week course to permit advanced students to gain reporting experience with the Virginia General Assembly.

MAC 380 Introduction to Advertising. Semester course; 3 lecture hours. 3 credits. For MAC majors only. An overview of the advertising industry. A practitioner-oriented approach to the creation, preparation, and evaluation of advertising. The course views the subject from an advertising management perspective.

MAC 391 Newspaper Advertising. Semester course; 3 lecture hours. 3 credits. For MAC majors only. A course in the preparation, placing, and proofing of advertising in daily and weekly newspapers. Its aim is to improve the appearance, effectiveness, and originality of newspaper advertising. Some attention is given to the organization and management of the advertising function in newspapers.

MAC 392 Advertising Copywriting. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MAC 380. For MAC majors only. Study of the different types of advertising copy used by both local and national advertisers. Practice in writing consumer, trade, and industrial copy.

MAC 393 Creativity for Television. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MAC 380. For MAC majors only. Learn the process of developing professional-level television advertising with a concentration in creative thinking and solutions. Students create TV commercials with attention to scripts, storyboards, talent, visual composition, editing, music, sound effects and direction.

MAC 394 Advertising Layout and Production. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MAC 300 and 380. For MAC majors only. Study and practice in layout and design of advertising for all media. Ideas will be followed through from concept to production.

MAC 403 Advanced Reporting. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MAC 303. For MAC majors only. Intensive study of the techniques of reporting meetings and news of public affairs. Attention will be paid to covering governmental agencies at all levels. Quality of writing will be a paramount and continual consideration.

MAC 404 Specialized/Project Reporting. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MAC 403. For MAC majors only. An advanced course to provide news beat experience for students reporting on complex issues facing the public in the urban community. Emphasis also on team reporting, in-depth research and interviewing techniques, and use of public records.

MAC 405 Advanced Editing. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisite: MAC 305. For MAC majors only. An advanced course in editing to prepare students for work on copy desks and news desks of daily newspapers. Emphasis on fine points of editing and the layout of newspaper pages.

MAC 408 Communications Law. Semester course; 3 lecture hours. 3 credits. For MAC majors only. Study of legal limitations affecting publishing, advertising, broadcasting, and telecasting and legal philosophy and ethics relating to the media of communications.

MAC 414 Advanced Radio Production. Semester course; 3 laboratory hours. 1 credit. Prerequisite: MAC 365. For MAC majors only. Documentary soundtrack production, multitrack production, music production for radio and television. Digital audio workstations. Audio and related electronic media computer software applications.

MAC 415 The Television Studio: Advanced Television Production. Semester course; 3 laboratory hours. 1 credit. Prerequisite: MAC 366. For MAC majors only. Students learn the inner workings of the television studio. Studio camera operation, advanced audio, basic studio lighting, digital video effects, Chyron operation, graphics creation, TelePrompTer operation, master control, multicamera live direction techniques. Video and related electronic media computer software applications.

MAC 425 Public Relations Research. Semester course; 3 lecture hours. 3 credits. For MAC majors only. An introduction to the role of research in public relations, with primary emphasis on content analysis, focus group, survey and communication audit methods and the evaluation of quantitative research data.

MAC 439 Public Relations Campaigns. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 323, 333, 335, and 425. For MAC majors only. Application of public relations theory and methods in the preparation of a plan for a public relations campaign. Special attention to the planning process, including issues analysis, and application of public relations and research methods.

MAC 450 Advertising Portfolio Development. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 300, 380, 392 and 394. For MAC majors only. An advanced, intensive study of copywriting and art direction for advertising. Students will prepare comprehensive advertisements and campaign materials for professional review. Emphasis will be on the development of a professional-quality portfolio.

MAC 461 The Documentary. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MAC 363, 365 and 366 or permission of instructor. MAC 461 to be taken concurrently with MAC 464. For MAC majors only. An examination of documentary concepts through analysis of radio, television, and film documentaries. The course will center on the development, writing, and production of a documentary in the medium (radio, television, or film) of the student's choice.

MAC 463 Electronic Media Writing II. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 363, 365. For MAC majors only. Radio practicum. Students will submit radio programming for broadcast on Richmond radio stations and on a statewide satellite news network. Writing intensive. Using the city of Richmond as their classroom, students will report, write and produce radio and audio news and programming. Studio and remote equipment will be utilized to create professional caliber projects.

MAC 464 Electronic Media Writing III. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 363, 365, 366. For MAC majors only. Television Practicum. Students will produce television programming for submission to broadcast on Richmond television stations. Writing intensive. Using the city of Richmond as their classroom, students will report, write and produce television and video news and programming. Studio and remote equipment will be utilized to create professional caliber projects.

MAC 475 Capital News Service. Semester course; 9 laboratory hours. 3 credits. Prerequisites: MAC 300 and 303. For MAC majors only. Concentrated semester-long course providing government reporting and/or editing/graphics experience for advanced students for publication in statewide community newspapers. Coverage includes VA General Assembly when in session plus legislative committee meetings and governmental agencies in Richmond as well as the U.S. congressional and presidential elections. Some topical issue-oriented political and medical enterprise reporting included. Strong emphasis on fast-paced deadlines. To register, a student must complete an application and submit writing samples for approval by the CNS Director.

MAC 480 Media Strategy. Semester course; 3 lecture hours. 3 credits. For MAC majors only. Development of media strategies to accomplish advertising objectives. Practical problems in planning and buying media. Analysis of the rapidly-changing media environment, with special attention given to new electronic media and the Internet.

MAC 481 Advertising Campaigns. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MAC 392, 393, 394 or permission of instructor. For MAC majors only. Intensive study in the planning and preparation of advertising campaigns. Students develop complete advertising programs including research, basic advertising plans, media and creative strategies, sales promotion, and merchandising plans.

MAC 486 Creative Advertising Workshops. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MAC 394 or permission of instructor. For MAC majors only. A concentrated study of principles of advertising message development. Creative strategies will be developed to accomplish advertising objectives. Students develop and defend campaign themes and message ideas including print layouts and television storyboards. Emphasis on creating messages for multimedia exposure.

MAC 487 Seminar in Advertising in Society. Semester course; 3 lecture hours. 3 credits. For MAC majors only. An examination of the role of advertising in modern life in America in light of historical and recent development in advertising and distribution.

MAC 489 Sales Promotion. Semester course; 3 lecture hours. 3 credits. For MAC majors only. Describes and analyzes sales promotion between the manufacturer and three other levels: the distribution system, the consumer, and the sales force. Effective use of special media, merchandising activities, and sales aids are also discussed.

MAC 491 Topics in Communications. Semester course; variable; 1, 2, or 3 credits per semester. Maximum total three credits. Prerequisite: permission of instructor. For MAC majors only. An intensive study of a specialized field of mass communications.

MAC 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses. Prerequisite: open generally only to students of junior and senior standing who have acquired at least twelve credits of Mass Communications. For MAC majors only. The course is designed for students who wish to study subject matter not offered elsewhere in the Mass Communications' curriculum. To register, a student must write a proposal and have it approved by the student's adviser, supervising instructor and school director or assistant director.

MAC 493 Fieldwork/Internship. Semester course; variable; 1, 2, or 3 credits per semester. Maximum total three credits toward graduation. Prerequisite: permission of faculty member and of internship coordinator. For MAC majors only. Selected students will receive on-the-job training under the supervision of an instructor and the employer. Internships are available in newspapers, magazines, public relations, advertising, radio, and television.

MAC 499 Problems and Issues in Mass Communications. Semester course; variable; 1, 2, or 3 credits per semester. Maximum total of three credits. For MAC majors only. Open only to students who have successfully completed at least twelve credits in mass communications. Determination of amount of credit and permission of instructor and school director must be obtained prior to registration for course. A concentrated examination of specific areas of mass communications. Each mini-course will be five weeks in length. Topics announced in advance.

Minor in African-American Studies

M. Njeri Jackson*

Director and Associate Professor of Political Science and Public Administration and African-American Studies (1990) BA 1976 Georgia State University; MA 1982 and PhD 1987 Atlanta University

Brooks, Christopher A.* (1990) *Associate Professor of Music and African-American Studies* BA 1978 University of Maryland; MA 1980

University of Michigan; MM 1984 and PhD 1989 University of Texas
Creighton-Zollar, Ann A. *Associate Professor of Sociology* (1981) BA, MA and PhD 1980 University of Illinois, Chicago Circle

Jones, Norrece T.* (1983) *Associate Professor of History and African-American Studies* BA Hampton Institute; PhD 1981 Northwestern University

Smedley, Audrey Y.* (1995) *Professor of Sociology and Anthropology and African-American Studies* BA 1954 and MA 1957 University of Michigan; PhD 1967 Victoria University of Manchester

Toppin, Edgar A.* (1994) *Associate Professor of Music and African-American Studies* AB and MA Howard University; PhD 1955 Northwestern University

Wood, Mark D.* (1997) *Assistant Professor of Religious Studies and African-American Studies* BA 1982 and MA 1984 California State University, Chico; MPhil 1989 and PhD 1994 Syracuse University, New York

* Joint appointments

A minor in African-American Studies requires a minimum of 18 credits. Students must complete AAS 103 Introduction to African-American Studies, and at least

one course dealing with Africa, African-Americans, and Africa and African-American arts. Courses in African-American Studies are designed to help students gain a knowledge and appreciation of the history and culture of Africans and African-Americans and their contributions to world civilizations.

Courses in African-American Studies

AAS 103 Introduction to African-American Studies. Semester course; 3 lecture hours. 3 credits. Using an interdisciplinary approach, this course will familiarize students with important events, developments, personalities, and other phenomena that help facilitate the study and understanding of African-Americans from their African past to their present existence.

AAS 104/SOC 104 Sociology of Racism. Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation, and as a form of human conflict. The central focus of interest will be on black-white relationships.

AAS 105, 106/HIS 105, 106 Survey of African History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of African civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present.

AAS 121, 122/DAN 121, 122 Tap Technique I. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness to move the body in the style required for tap dancing.

AAS 126, 127/DAN 126, 127 African-Caribbean Dance I. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean.

AAS 151, 152/DAN 151, 152 Jazz Dance Technique I. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: DAN 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness, and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance.

AAS 200/ANT 200 Introduction to African Societies. Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems, and other cultural features that are traditional to its people.

AAS 204 Africa in Transition. Semester course; 3 lecture hours. 3 credits. Prerequisite: AAS 200 or permission of instructor. The impact of modern social change upon the traditional aspects of African life. Various aspects of social change as it applies to Africa today will be explored.

AAS 208 African-American Social Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: AAS 103. This course exposes students to the rich chronicle of the experiences and views of Africans in the United States that has been preserved in the writings of scholars, activists, and creative artists. The course introduces students to this body of thought selecting a number of social critics and creative writers whose texts address persistent themes that have shaped African-American life.

AAS 226/DAN 226 African-Caribbean Dance II. Semester course; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DAN 126, 127, audition, or permission of instructor. Further training and study in dances based on the movements and rhythms of Africa and the Caribbean.

AAS 250/MHT 250 Introduction to African-American Music. Semester course; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects including their African roots and contemporary popular expression.

AAS 302/POS 302 Politics of the Civil Rights Movements. Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. It has special focus on the events of the 1960's and, particularly their implication for the current state of Civil Rights in the U.S.

AAS 303/THE 303 Black Theatre. Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black-theatre dramaturgy.

AAS 305/SOC 305/WST 305 Sociology of the Black Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

AAS 307/RST 307 Black Religion. Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects, and cults.

AAS 308 Modes of Inquiry in African-American Studies. Semester course; 3 lecture hours. 3 credits. Prerequisite: AAS 208. This course introduces students to the interdisciplinary processes whereby those working in the field develop their arguments and interpretations concerning the black experience. Students will develop increased skills in library research and an awareness of the importance of such methodologies as archaeology, oral history, case studies, participant observations, experiments, and surveys. Student will be introduced to the need for critical analysis, the role of biases and frames of references, and the reason why scholars working in the field often reach difference conclusions with reference to issues of fact, interpretation, and significance.

AAS 314/ENG 314 African-American Literature. Semester course; 3 lecture hours. 3 credits. An examination of the culture and literature of African-Americans from their roots in Africa and the African Diaspora to the present day. Authors may include Wheatley, Jacobs, Wilson, Brown, Dubois, Hurston, Wright, Gaines, and Morrison.

AAS 315/ECO 315 Economic Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 210-211. An introduction to the process of economic development including a survey of development theory and a study of the experience of both underdeveloped and developed countries. Economic policies and tools of economic planning for stimulating development will be presented.

AAS 318/POS 318/WST 318 Politics of Race, Class and Gender. Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States.

AAS 322/PSY 322 Personality and Behavior of the African-American. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. A study of personality factors, such as motivation, ego functioning, and the socialization processes with special emphasis on living conditions of African-Americans.

AAS 333/GEO 333 Geography of Africa. Semester course; 3 lecture hours. 3 credits. A study of land forms, climate, peoples, boundaries, trade, and cultural groupings of the African continent.

AAS 342/ARH 342 African-American Art. Semester course; 3 lecture hours. 3 credits. Prerequisite: advanced standing. A study of the art forms produced by Americans of African origin from the seventeenth century to the present with an emphasis on contemporary trends in black art.

AAS 343/POS 343 Black Political Thought. Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present.

AAS 350/MHT 350 Studies in the Music of the African Continent and Diaspora. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions.

AAS 356/POS 356/INT 356 African Government and Politics of Africa. Semester course; 3 lecture hours. 3 credits. This course will introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization strategies. Using the comparative approach, the course will primarily focus on West, East, and Central Africa.

AAS 357/POS 357/INT 357 Politics of Southern Africa. Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

AAS 358/ARH 358 African Art and Architecture. Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art.

AAS 361,362/HIS 361,362 Americans from Africa. Semester courses; 3 lecture hours. 3, 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations, and ideologies of black Americans in the twentieth century. First semester: to 1877. Second semester: since 1877.

AAS 363/ENG 363 African Literature. Semester course; 3 lecture hours. 3 credits. Prerequisite: ENG 101-102 or 200. A survey of the literatures of Africa with particular emphases on fiction and on West Africa. Some attention will also be given to orature.

AAS 365/ENG 365 Caribbean Literature. Semester course; 3 lecture hours. 3 credits. Prerequisite: ENG 101-200. A survey of West Indian writings. Attention will be given to African, European, and Amerindian influences, as well as to the emergence of a West Indian literary tradition.

AAS 387/HIS 387 History of West Africa. Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to the present, with emphasis on the rise of states and empires, the introduction, spread, and impact of Islam, the Atlantic slave trade and its effects, colonialism, African resistance and nationalism, and developments since independence.

AAS 388/HIS 388 Africa: Social, Cultural, and Economic History. Semester course; 3 lecture hours. 3 credits. A study of economic, social, and cultural developments in Africa from the beginning of the nineteenth century to the present. Emphasis is placed on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs.

AAS 389/HIS 389 History of Southern Africa. Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia, and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa.

AAS 390/HIS 390/WST 390 Africa and the Americas: Slavery, Gender, and Race. Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

AAS 392/HIS 392 The Caribbean to 1838. Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late fifteenth century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition.

AAS 393/HIS 393 Akhenaten to Cleopatra. Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten, and various aspects of Egyptian daily life.

AAS 401/SOC 401 African-Americans and the United States Health Care System. Semester courses; 3 lecture hours. 3 credits. Prerequisite AAS 103, AAS 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United State. Students are required to participate in an experiential exercise designed to enhance learning.

AAS 408 Seminar in African-American Studies. Semester course; 3 lecture hours. 3 credits. Prerequisite: AAS 308, AAS 416. This course is generally open only to students of senior standing who have completed 24 credits of African-American Studies. This course will involve the planning and execution of a major research project demonstrating the interdisciplinary processes through which those working in the field of African-American Studies use diverse sources to develop their arguments and interpretations.

AAS 413/ARH 350 African and Oceanic Art. Semester course; 3 lecture hours. 3 credits. A study of the architecture, painting, sculpture, and civilizations of the major art-producing tribes of West Africa and Oceania from the thirteenth century to the present.

AAS 416/ANT 416 The Origin and Evolution of the Idea of Race. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103 or AAS 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the twentieth century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon.

AAS 420/ANT 420 Women of Africa. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103 or AAS 103 or permission of instructor. This course looks at the traditional roles of women in African Societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context.

AAS 440/ARH 440 Contemporary Art and Architecture of Africa. Semester course; 3 lecture hours. 3 credits. A study of the impact on African art and architecture of Colonialism, urbanization, and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists.

AAS 491 Topics in African-American Studies. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits; three credits may be applied to the African-American studies minor. An in-depth study of specialized areas of African-American Studies.

AAS 492 Independent Study. Semester course; variable credit. Maximum four credits per semester. Maximum total of four credits in all independent study courses. Open generally only to students of junior and senior standing who have acquired at least 12 credits in African-American studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be procured prior to registration for the course.

Minor in American Studies

Richard A. Fine

Professor and Chair, Department of English and Coordinator, American Studies (1979) AB 1973 Brown University; MA 1975 and PhD 1979 University of Pennsylvania

Offered jointly by the Departments of English and History, the minor in American studies consists of at least 18 upper-level credits to be distributed as follows: six credits in American studies (AMS) courses; three credits in humanities electives; three credits in social science electives; and six credits in either humanities, social science or other approved electives, or in independent study. All courses selected to fulfill distribution areas must deal with American materials and topics. A list of recommended courses and electives is available from the coordinator.

Courses in American Studies

AMS 195 Richmond. 15 contact hours. 1 credit. A series of mini-courses dealing with aspects of Richmond's literary and historical importance from the city's beginning to the present.

AMS 391 Topics in American Studies. Semester course; 3 lecture hours. 3 credits. Selected issues or problems in American civilization with materials drawn from such areas as history, the social sciences, philosophy, literature, the arts and mass communications. May be repeated once for credit.

AMS 394 Perspectives in American Studies. Semester course; 3 lecture hours. 3 credits. Prerequisite: six credits in American-related courses. An introduction to the methods, significant works, and major trends in American studies. May be taken for American literature credit by English majors. May not be used to satisfy the College of Humanities and Sciences requirements in literature.

Department of Biology

Leonard A. Smock

Professor and Chair (1979) BS 1969 and MS 1970 University of Illinois; PhD 1979 University of North Carolina

James E. Gates

Associate Professor and Associate Chair (1975) BS and MS Northern Illinois University; PhD 1972 University of Missouri

Donald R. Young

Professor and Director of Graduate Studies (1984) BS 1975 Clarion State University; MS 1979 and PhD 1982 University of Wyoming

Blem, Charles R. (1969) *Professor* BS 1965 Ohio University; MS 1968 and PhD 1969 University of Illinois

Blem, Leann B. (1982) *Lecturer* BS Ohio University; MS 1968 University of Illinois

Brown, Bonnie L. (1992) *Associate Professor* BS 1981 University of Alabama, Birmingham; PhD 1989 Old Dominion University

Chinnici, Joseph P.* (1970) *Associate Professor of Biology and Human Genetics* AB 1965 La Salle College; PhD 1970 University of Virginia

Conway, Carolyn M. (1976) *Assistant Professor* BS Longwood College; MA College of William & Mary; PhD 1972 University of Miami

Eggleston, William B. (1993) *Assistant Professor* BS 1982 Duke University; PhD 1990 University of Wisconsin, Madison

Fine, Michael L. (1979) *Associate Professor* BS University of Maryland; MA College of William & Mary; PhD 1976 University of Rhode Island

Fisher, Robert W., Jr. (1975) *Associate Professor* BS California State University; MA University of California, Santa Cruz; PhD 1974 Syracuse University

Garman, Gregory C. (1985) *Associate Professor and Director, Center for Environmental Studies* BA 1978 Millersville University; MS 1980

- Virginia Polytechnic Institute and State University; PhD 1984 University of Maine
- Kester, Karen M. (1997) *Assistant Professor* BS 1980 and MS 1983 Louisiana State University; PhD 1991 University of Maryland
- McCowen, Sara M. (1975) *Associate Professor* BA Duke University; MAT University of North Carolina, Chapel Hill; PhD 1975 Medical College of Virginia, Virginia Commonwealth University
- Mills, Richard R. (1971) *Professor* BA Emory and Henry College; MS and PhD 1964 Virginia Polytechnic Institute and State University
- Pagels, John F. (1969) *Professor* BS Central Michigan University; MS and PhD 1970 Tulane University
- Perozzi, Rhoda E. (1993) *Instructor* BA 1969 Harding University; MS 1973 and PhD 1976 University of Illinois
- Peters, Gerald A. (1987) *Professor* BS 1966 Eastern Michigan University; MS 1969 and PhD 1970 University of Michigan
- Plunkett, Gregory M. (1996) *Assistant Professor* BS 1987 and MA 1990 College of William & Mary; PhD 1994 Washington State University
- Ryan, John J. (1997) *Assistant Professor* BA 1988 University of Richmond; PhD 1992 Medical College of Virginia, Virginia Commonwealth University
- Seidenberg, Arthur J.* (1968) *Associate Professor and Assistant Dean for Undergraduate Academic Affairs and Coordinator of Pre-Health Sciences Advising* BS 1961 Brooklyn College; PhD 1969 University of Illinois
- Stewart, Jennifer K. (1981) *Associate Professor* BS, MS and PhD 1975 Emory University
- Tombes, Robert M.* *Assistant Professor of Biology and Massey Cancer Center* BA 1981 University of Virginia; PhD 1986 University of Washington, Seattle
- Turner, Gail C. (1984) *Lecturer* BS 1971 and MS 1973 East Tennessee State University
- Webb, Stanley R.* (1976) *Associate Professor of Biology and Pathology* BS 1967 Ouachita University; MS 1970 University of Arkansas; PhD 1974 Purdue University
- Wu, Fang-Sheng (1988) *Associate Professor* BS 1968 and MS 1973 National Taiwan Normal University; PhD 1977 Michigan State University

Emeriti Faculty

- Johnson, Miles F. *Professor Emeritus* BS Wisconsin State University at River Falls; MS University of Wisconsin; PhD University of Minnesota
- May, Margaret L. *Associate Professor Emerita* BS American University; MS George Washington University
- Richards, Walter L., Jr. *Associate Professor Emeritus* BS Virginia Military Institute; MA University of Virginia

* Joint Appointment

The curriculum in biology prepares students for graduate study in biology, for employment in laboratory or field programs in private industry or government agencies, and for teaching in secondary schools. This curriculum also prepares students for admission into schools of medicine, dentistry, and veterinary medicine, and into allied health programs.

The Department of Biology offers the Bachelor of Science in Biology.

Biology majors interested in teaching careers in elementary, secondary, or special education can enroll in the Extended Teacher Preparation Program which simultaneously awards a bachelor's degree in biology and a master's degree in teaching. For more information about this program jointly administered by the College of Humanities and Sciences and the School of Education, contact the School of Education's Office of Academic Services.

Preprofessional Study for the Health Sciences. The Bachelor of Science in Biology program is a four-year course of study preparing students for medical, dental, or veterinary school.

Master of Science in Biology. For information about this program, see the *Graduate Bulletin*.

Nonmajor Electives. The department offers a range of courses that do not fulfill requirements of the major or minor and are not specific requirements for pre-health science students. These courses are designed to develop the general science literacy of non-biology majors.

Degree Requirements

Bachelor of Science in Biology. The bachelor's curriculum in biology requires a minimum of 120 credits, with at least 40 of those credits in biology. No more than four credits of biochemistry can be applied toward the major.

Majors must take STA 210 Basic Practice of Statistics, and one additional course from the following options:

1. A statistics (STA) course numbered above 210.
2. A mathematics (MAT) course numbered 200 or above.

Before enrollment into any of these mathematical sciences options, all students must take the Mathematical Placement Test. Depending on the test results, students may be placed in MAT 151 Precalculus Mathematics before being admitted into one of the courses listed above.

Below is a list of required courses and the indicated recommended sequence.

Freshman Year. BIO 151-152 Introduction to Biological Science and L151-L152 Laboratory I and II, CHE 101-102 General Chemistry and CHE L101-L102 General Chemistry Laboratory I and II, and mathematical sciences courses selected from the options described previously.

Sophomore Year. BIO 218 Cell Biology, BIO 317 Ecology, one additional BIO course preferably with lab, CHE 301-302 Organic Chemistry and CHE L301-L302 Organic Chemistry Laboratory I and II, and mathematical sciences courses if not already completed.

Junior Year. Two courses from the BIOCORE and one additional BIO course, PHY 207-208 University Physics or PHY 201-202 General Physics.

Senior Year. Remaining BIO major courses.

BIOCORE. The following courses must be taken by majors:

- BIO 151-152, L151-L152 Introduction to Biological Science and Laboratory I and II
- BIO 218 Cell Biology
- BIO 310 Genetics
- BIO 317 Ecology

Organismal Biology. One course from each of the following groups:

Animal Group

- BIO 301 Comparative Vertebrate Anatomy
- BIO 302 Animal Embryology
- BIO 312, L312 Invertebrate Zoology and Laboratory
- BIO 313, L313 Vertebrate Natural History and Laboratory

Plant Group

- BIO 320 Biology of the Seed Plant
- BIO 321, L321 Plant Development and Laboratory
- BIO 410 Taxonomy of Flowering Plants

At least six laboratory courses must be taken from all BIO courses; one of these may be BIO 492 Independent Study or BIO 495 Research and Thesis. Registration in BIO 492 or 495 must be for a minimum of 2-credit hours in order to count as one of the six required laboratory courses.

Transfer or Change-of-Major Students

Students who change their major to biology after having completed BIO 109, L109, 110, L110 or transfer to VCU with a general biology course equivalent to these courses are allowed to count these courses toward the biology major in lieu of BIO 151, 152, L151, L152. BIO 101, 102, and 103 and laboratories may not be used toward the biology major, but may be used as general electives toward the bachelor's degree.

No more than 8 credits of the 100-level (or introductory level) courses can be applied to the major.

Minor in Biology

The minor in biology shall consist of 23 credits, including the following: BIO 151-152, L151-152 Introduction to Biological Science and Laboratory I and II; BIO 218 Cell Biology; BIO 310 Genetics; and BIO 317 Ecology. Three biology laboratory experiences are required including BIO L151 and L152, but not including BIO 492 Independent Study or BIO 495 Research and Thesis. Substitutions for BIO 151-152 and laboratories may be made on a case-by-case basis.

Students are also required to complete CHE 101-102, L101, L102 General Chemistry and General Chemistry Laboratory I and II.

Honors in Biology

Biology majors in the BS program may earn Honors in Biology. To qualify, students must have overall and biology grade-point averages of at least 3.50 and must have completed BIO 490 Research Seminar and at least 3 credits of BIO 495 (Research and Thesis) with A or B grades in each. Students must meet all Department of Biology requirements for graduation. Students should consult with their academic advisers to create a program suitable to their particular needs and interests.

Cooperative Education Program

Qualifying students pursuing undergraduate degrees in biology are eligible for the Cooperative Education Program. A full description of this program appears in Part XX of this *Bulletin*.

Courses in Biology

The following courses do not apply toward the major in biology: BIO 101, L101, 102, L102, 103, L103, 205, L205, 206, L206, 209, L209, 217, 315, 332.

BIO 101 Life Science. Semester course; 3 lecture hours. 3 credits. A topical approach to basic biological principles. Topics include molecular aspects of cells, bioenergetics, photosynthesis, cellular respiration, cellular and organismal reproduction, genetics and evolution, and ecology. Not applicable toward the BS in Biology. Both BIO 101 and BIO 109 or 110 may not be offered for degree credit.

BIO L101 Life Science Laboratory. Semester course; 2 laboratory hours. 1 credit. Prerequisite or corequisite: BIO 101. Not applicable toward the BS in Biology. Laboratory exercise correlated with BIO 101.

BIO 102 Science of Heredity. Semester course; 3 lecture and 1 recitation hour. 4 credits. Basic scientific principles of genetics and its impact

on individuals and society. Draws together principles of biology, chemistry, mathematics, ethics, and sociology. Topics include principles of inheritance, DNA structure and function, biotechnology and its impact on society, the nature of various genetic disorders, genetic screening and counseling, population genetics, and the bioethics of genetic manipulation. Not applicable for credit towards the BS in Biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

BIO L102 Science of Heredity Laboratory. Semester course; 2 hours. 1 credit. Pre or corequisite: BIO 102 (113). Laboratory exercises correlated with BIO 102. Not applicable for credit towards the BS in Biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

BIO 103/ENS 103 Environmental Science. Semester course; 3 lecture and 1 recitation hour. 4 credits. Basic scientific principles of environmental processes. Draws together aspects of biology, chemistry, geology, physics, and sociology. Among the topics covered are ecology, natural resources, air and water resources, energy and recycling, population biology and sustainable global societies. Not applicable for credit towards the BS in Biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

BIO L103/ENS L103 Environmental Science Laboratory. Semester course; 2 hours. 1 credit. Pre or corequisite: BIO 103. Laboratory exercises correlated with BIO 103. Not applicable for credit towards the BS in Biology. Not applicable as a prerequisite for any biology degree. Not applicable as a prerequisite for any biology course at the 200 level or above.

BIO 151 Introduction to Biological Science I. Semester course; 3 lecture hours. 3 credits. Designed for biology majors. BIO 151 may be taken after BIO 152. Principles of plant biology including cell biology, physiology, and evolution of plant diversity on Earth. BIO 151 may be taken after BIO 152.

BIO L151 Introduction to Biological Science Laboratory I. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 151. Laboratory investigation of plant genetics, physiology, and evolution, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIO 151.

BIO 152 Introduction to Biological Science II. Semester course; 3 lecture hours. 3 credits. Designed for biology majors. Principles of animal biology including genetics, physiology, and evolution of animal diversity on Earth. BIO 152 may be taken before BIO 151.

BIO L152 Introduction to Biological Science Laboratory II. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 152. Laboratory investigation of plant genetics, physiology, and evolution, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIO 152.

BIO 200 Biological Terminology. Semester course; 1 lecture hour. 1 credit. Prerequisite: a course in biology. The study of Greek and Latin word roots in the vocabulary of biology and medicine.

A "C" grade or better in each prerequisite course (BIO 109, L109; BIO 110, L110; BIO 151, L151; BIO 152, L152) is required for enrollment in BIO 205, 206, 209, and 217.

BIO 205 Basic Human Anatomy. Semester course; 2 lecture hours. 2 credits. Prerequisite: 4 credits in biology. Corequisite: BIO L205. Human body structure with emphasis on the skeleto-muscular aspects, utilizing human specimens and models as demonstrations. (Not applicable to the biology major.)

BIO L205 Basic Human Anatomy Laboratory. Semester course; 4 laboratory hours. 2 credits. Pre or corequisite: BIO 205. Laboratory stressing human body structure with emphasis on the skeleto-muscular aspects, utilizing the cat for dissection and human specimens and models as demonstrations. (Not applicable to the biology major.)

BIO 206/PIO 206 Human Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: 4 credits in biology. Functioning of the human body with emphasis on experimental procedures. (Not applicable to the biology major.)

BIO L206/PIO L206 Human Physiology Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIO/PIO 206. Functioning of the human body with emphasis on experimental procedures. (Not applicable to the biology major.)

BIO 209 Medical Microbiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: 4 credits in biology. General principles of microbiology and immunology to provide a thorough understanding of the host-microbe relationship in disease. (Not applicable to the biology major.)

BIO L209 Medical Microbiology Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIO 209. Techniques to culture, isolate, and identify microbes with related topics such as water coliform tests, and antibiotics and disinfectant sensitivity testing. (Not applicable to the biology major.)

BIO 217 Principles of Nutrition. Semester course; 3 lecture hours. 3 credits. Prerequisite: 4 credits in biology. An introduction to basic principles of nutrition and their application in promoting growth and maintaining health throughout the life cycle. (Not applicable to the biology major.)

A "C" grade or better in each prerequisite course (BIO 151, L151, 152, L152, or equivalent) is required for enrollment in all advanced biology courses (BIO 218 and higher).

BIO 218 Cell Biology. Semester course; 3 lecture hours. 3 credits. Prerequisites: eight credits of general biology and eight credits in chemistry. An introductory examination of fundamental cellular process including structure-function relationships, enzymology, metabolism, genetic function, and cellular reproduction.

A "C" grade or better in BIO 218 is required for enrollment in all courses for which it is a prerequisite.

BIO 291 Topics in Biology. Semester course; variable credit. A study of a selected topic in biology. See the *Schedule of Classes* for specific topic(s) and prerequisites.

BIO 292 Independent Study. Semester course; variable credit. Maximum of two credits per semester; maximum total credit for all independent study courses (BIO 292 and/or 492) six credits. Prerequisites: eight credits in biology and an overall GPA of 3.0. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Designed to allow students to accomplish independent readings of biological literature under the supervision of a staff member.

BIO 300 Experimental Methods. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: BIO 151 and L151, BIO 152 and L152 or equivalent, and a year of general chemistry. Basic methods used in biological research including experimental design, instrumentation, data collection, analysis, and presentation.

BIO 301 Comparative Vertebrate Anatomy. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Prerequisites: BIO 151-L151, 152-L152. The evolution of vertebrate forms as demonstrated by anatomical studies of selected vertebrate types.

BIO 302 Animal Embryology. Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: BIO 218. Basic reproductive and developmental processes during animal embryonic development. Includes programming/packaging in the egg, cell-cell interactions, and basic organogenesis. Cellular mechanisms and the role of differential gene activity in developmental processes and experimental work using living invertebrate and vertebrate embryos.

BIO 303 Bacteriology. Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisites: BIO 218 and eight credits in chemistry. The morphology and physiology of bacteria as applied to their cultivation, identification, and significance to other organisms.

BIO 307 Aquatic Ecology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 317, CHE 102 and L102. The physical, chemical, and especially the biological aspects of freshwater ecosystems.

BIO L307 Aquatic Ecology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 307. Laboratory and field studies of the biota of aquatic habitats and their relationship with the environment.

BIO 308 Vertebrate Histology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 218. Microanatomy of vertebrate cells, tissues, and organs and the relationship of structure to function. Laboratory work involves an in-depth study of vertebrate microanatomy at the light microscope level as well as an introduction to techniques used for the preparation of materials for histological study.

BIO 309 Entomology. Semester course; 2 lecture and 6 laboratory hours. 4 credits. Prerequisites: BIO 151-L151, 152-L152. Field and laboratory work emphasized to illustrate insect diversification, diagnostic features, habitats, and development patterns. A project is required and some independent work will be necessary.

BIO 310 Genetics. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 218. The basic principles of molecular and applied genetics of plants, animals, and microorganisms.

BIO L310 Laboratory in Genetics. Semester course; 4 laboratory hours. 2 credits. Prerequisite or corequisite: BIO 310. Exercises and experiments are designed to demonstrate the laws of heredity using a variety of prokaryotic and eukaryotic organisms. Topics may include probability and statistics, cell division, particulate inheritance including X-linked examples, genetic mapping, chromatography, isolation and analysis of DNA, population genetics.

BIO 311 Animal Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 218. Physiological principles of animal cells, tissues, and organs from the viewpoint of chemical and physical phenomena.

BIO L311 Animal Physiology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 311. Experimental methods in physiology.

BIO 312 Invertebrate Zoology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 151-L151, 152-L152. A survey of the invertebrate animals with emphasis on environmental interactions. A weekend trip to a marine environment is required.

BIO L312 Invertebrate Zoology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 312. A laboratory survey of the invertebrate animals, with emphasis on environment interactions. A weekend trip to a marine environment is required.

BIO 313 Vertebrate Natural History. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 151-L151, 152-L152. The natural history of vertebrates with emphasis on the species native to Virginia.

BIO L313 Vertebrate Natural History Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 313. Laboratory exercises focusing on the natural history of vertebrates, with emphasis on the species native to Virginia.

BIO 315/ENS 314 Man and Environment. 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. (Not applicable to the biology major.)

BIO 317 Ecology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 151-L151, 152-L152. An introduction to the basic principles of ecology, including interactions among organisms and influences of the physical environment.

BIO L317 Ecology Laboratory. Semester course; 4 laboratory hours. 2 credits. Pre or corequisite: BIO 317. A field-oriented course that provides experience in ecological research, including experimental design, instrumentation, data collection, and data analysis.

BIO 320 Biology of the Seed Plant. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIO 151-L151, 152-L152. The physiology, structure, and adaptation of seed plants.

BIO 321 Plant Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 218. A survey of the developmental changes that take place during the life cycle of lower and higher plants. Emphasis is placed on the control factors that are involved in regulating the ordered changes which take place during development.

BIO L321 Plant Development Laboratory. Semester course; 4 laboratory hours. 2 credits. Pre or corequisites: BIO 321. An experimental approach applied to a phylogenetic survey of developmental model systems. Observational and experimental protocols will be used to collect data and gather information. Problem solving skills will be utilized to analyze and present experimental results.

BIO 332/ENS 330 Environmental Pollution. Semester course; 3 lecture hours. 3 credits. Prerequisite: eight credits in biology. The pollution in the environment with emphasis on the procedures for detection and abatement. (Not applicable to the biology major.)

BIO 391 Topics in Biology. Semester course; variable credit. A study of a selected topic in biology. See the *Schedule of Classes* for specific topic(s) and prerequisites.

BIO 392 Introduction to Research. Semester course; 2 lecture/demonstration hours. 1 credit. Prerequisites: 15 credits in biology and junior/senior status, or permission of the instructor. An introduction to the scientific process, including the mechanics of problem definition, information gathering, and experimental design. Experimentation is discussed in context with methods of data collection and analysis; some basic research techniques are demonstrated. Aims are to prepare the student for future research experiences, and to have the student write detailed research proposals.

BIO 401 Applied and Environmental Microbiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 218. The biology and chemical activities of microorganisms (bacteria, algae, virus, and fungi) of industrial, pharmaceutical, and agricultural importance.

BIO 405 Bacterial Physiology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIO 218 and CHE 301-302. The physiology and metabolism of prokaryotic cells including cell structure and function, growth, basic genetics and regulation of cell functions.

BIO 410 Systematic Botany. Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIO 151-L151, 152-L152 or permission of instructor. Taxonomy, diversity, and evolutionary history of vascular plants (including ferns, gymnosperms, and flowering plants). Lecture emphasis on evolutionary relationships; laboratory emphasis on plant recognition and identification, especially of the Virginia flora, including some field trips to areas of local botanical interest.

BIO 411 Summer Flora. Semester course; 1 lecture and 5 laboratory hours. 3 credits. Prerequisites: BIO 151-L151, 152-L152 or permission of instructor. Field course in taxonomy of local summer flora.

BIO 415 Aquatic Macrophytes. Semester course; 1 lecture and 5 laboratory hours. 3 credits. Prerequisite: BIO 410 or 411. Field and laboratory study of vascular plants or aquatic habitats; including collection and identification, and consideration of the ecology, morphology, and economic value of aquatic macrophytes.

BIO 416 Ornithology. Semester course; 3 lecture hours. 3 credits. Prerequisite: 8 credits of biology or permission of instructor. Basic biology of birds, with emphasis on their role in the environment.

BIO L416 Ornithology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 416. Techniques of identifying, counting, and analyzing behavior of birds in the field.

BIO 417 Mammalogy. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: 12 credits of biology and permission of instructor. Study of the characteristics, adaptive radiation, and distribution of mammals, with emphasis on North American forms.

BIO 420 Plant Physiology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIO 218 and either BIO 320 or 321. Topics: photosynthesis, mineral nutrition, transport, phytohormones,

development, tissue culture, and environmental stress. The laboratory will stress student-oriented research projects.

BIO 431 Introduction to Marine Biology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 317 and CHE 102, L102. An introduction to physical, chemical, and geological oceanography and a more detailed treatment of the organisms and ecological processes involved in the pelagic and benthic environments of the world's oceans and estuaries.

BIO 432 Biology of Polluted Waters. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 317 and CHE 102, L102. Survey of the effects of water quality on the biota of freshwater and marine ecosystems with industrial and domestic water usage considerations.

BIO L432 Biology of Polluted Waters. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIO 432. Laboratory and field exercises demonstrating basic principles and effects of water pollution on aquatic organisms and ecosystems.

BIO 435 Herpetology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 317 or equivalent. The evolution, ecology, structure, taxonomy, and behavior of reptiles and amphibians.

BIO L436 Laboratory in Herpetology. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIO 435. Identification, behavior, structure, and ecology of amphibians and reptiles. Two Saturday field trips are required.

BIO 445 Neurobiology and Behavior. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 317 or equivalent. The study of animal behavior stressing ecological, evolutionary, and neurobiological approaches.

BIO 455 Immunology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 218 and 310. A comprehensive introduction to the immune system of higher animals, emphasizing the molecular and cellular basis for antibody-mediated immunity.

BIO 490 Research Seminar. Semester course; 1 credit. Pre or corequisite: BIO 492 or 495 and senior status. Opportunity for students to develop skills necessary for effective oral presentation of their research work. Activities include a variety of seminar discussions and activities such as preparation of visual materials and statistical analysis of data. Students will make several oral presentations directly related to their specific BIO 492 or 495 projects.

BIO 491 Topics in Biology. Semester course; variable credit. A study of a selected topic in biology. See *Schedule of Classes* for specific topic(s) and prerequisites.

BIO L491 Topics in Biology Laboratory. Semester course; variable credit. Laboratory investigations in a selected topic of biology. See the *Schedule of Classes* for specific topic(s) and prerequisites.

BIO 492 Independent Study. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses (BIO 292, 492 and/or 495). Open only to juniors and seniors. Permission of the supervising faculty member and the department chair must be obtained prior to registration. Projects should include data collection and analysis, learning field and/or laboratory techniques, and/or mastering experimental procedures, all under the direct supervision of a faculty member. A minimum of 3 hours of supervised activity per week per credit hour is required. A final report must be submitted at the completion of the project. Graded Pass/Fail.

BIO 495 Research and Thesis. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all undergraduate research in biology (BIO 292, 492, 495). Prerequisites: BIO 392 or BIO 492, permission of the supervising faculty member, and a research proposal acceptable to the chairperson. Activities include field and/or laboratory research under the direct supervision of a faculty mentor. A minimum of 3 hours of supervised activity per week per credit hour is required. A written thesis of substantial quality is required upon completion of the research.

BIO 496 Biology Preceptorship. Semester course; maximum 4 credits. Prerequisite: Open to juniors and seniors who have completed 14 credits of biology (including the relevant core course) and have an overall GPA of 3.0 or better. Permission of instructor and department chair required prior to registration. Preceptors will conduct review sessions for students enrolled in ONE of the following biology core courses: BIO 218, BIO 317, or BIO 310. Preceptorship cannot be repeated for the same course for biology credit. Preceptors will attend all class lectures, prepare course study/review material and lead 3 hours of review sessions each week under the guidance of the faculty adviser. A preproposal and final report are required. Graded as Pass/Fail.

Courses at the 500 level listed in this *Bulletin* are open to qualified seniors and graduate students only.

BIO 502/MIC 502 Microbial Biotechnology. I. Semester course; 3 lecture hours. 3 credits. Prerequisites: MIC 504 or equivalent, BIC 503-504 or equivalent. Discussion of the application of basic principles to the solution of commercial problems. The course will cover the historical principles in biotransformations as related to primary and secondary metabolism, as well as recombinant DNA technology and monoclonal antibodies and products resulting from the application of recombinant DNA technology.

BIO 503 Fish Biology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 317 or equivalent. Classification, behavior, physiology, and ecology of fishes. Laboratories will emphasize field collection of fish and identification of specimens.

BIO 504 Comparative Animal Physiology. Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIO 218 and CHE 301, L301, 302, and L302. Comparative physiology of animals with a molecular emphasis.

BIO 507 Aquatic Microbiology. Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIO 303 and 307 or equivalents. This course will involve a practical approach to the methods used to culture, identify, and enumerate specific microorganisms that affect the cycling of elements in aquatic systems and those which affect or indicate water quality.

BIO 510 Conservation Biology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 310 and 317 (or equivalents) or permission of instructor. Explores the accelerated loss of species due to increasing human population pressure and the biological, social, and legal processes involved in conserving biodiversity.

BIO 514 Stream Ecology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 317. A study of the ecology of streams and rivers. Laboratory emphasis is on the structure and functioning of aquatic communities in mountain to coastal streams.

BIO 518 Plant Ecology. Semester course; 3 lecture and 2 laboratory hours. One three-day field trip is required. 4 credits. Prerequisite: BIO 317. A lecture, field, and laboratory course concerned with the development, succession, and dynamics of plant communities and their interrelations with climate, soil, biotic, and historic factors.

BIO 520 Population Ecology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 310 and 317 or permission of instructor. Theoretical and empirical analysis of processes that occur within natural populations, including population genetics, population growth and fluctuation, demography, evolution of life history strategies, and interspecific interactions. Quantitative models will be used extensively to explore ecological concepts.

BIO 521 Community Ecology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 317 or equivalent. Theoretical and empirical analysis of the structure and function of natural communities, ecosystems, and landscapes.

BIO 522 Evolution and Speciation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 310 or equivalent. Evolutionary principles, with emphasis on genetic and environmental factors leading to changes in large and small populations of plants and animals, and the mechanisms responsible for speciation.

BIO 524 Endocrinology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 218 and CHE 301, L301, 302, and L302 or equivalent. Hormonal control systems at the organ, tissue, and cellular level. Although the major emphasis will be on vertebrate endocrine systems, some discussion of invertebrate and plant control systems will be covered.

BIO 530/GEN 501 Human Genetics. Semester course; 3 credits. Prerequisites: BIO 310 and CHE 301, L301, 302, L302, or equivalents. Emphasizes a broad approach, at an advanced level, to human genetics. Explores topics including cytogenetics, pedigree analysis, genetic mapping, aneuploid syndromes, inborn error of metabolism, neonatal screening, cancer, genetic engineering, behavior and intelligence, prenatal diagnosis, and genetic counseling.

BIO 580 Eukaryotic Biotechnology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 310 and BIO L310, or graduate standing in Biology or related fields. Discussion of principles, concepts, techniques, applications, and current advances in cellular and molecular biology aspects of biotechnology for animal and plant cells. The course will cover molecular construction of foreign genes; DNA cloning; technologies for DNA, RNA, and protein analysis; nonvector and vector-mediated genetic transformation; gene regulation in transgenic cells; cell and tissue culture; cell fusion; and agricultural, medical, and other industrial applications.

BIO 585 Virology. Semester course; 3 lecture hours. 3 credits. Prerequisites: 16 credits in biology including BIO 218 or equivalent, and eight credits in chemistry. A comprehensive introduction to virology encompassing viruses of vertebrates, invertebrates, plants, and bacteria. Topics include physical and chemical characterization, classification, detection, replication, genetics, diseases, immunology, epidemiology, and interactions of euromotor disorders of infants and children. Critically surveys current theory and practice in neuromotor therapeutics for children and adults.

Department of Chemistry

Fred M. Hawkrige

Professor and Department Chair (1976) BS 1966 University of Georgia; PhD 1971 University of Kentucky

Crawley, Charlene D. (1995) *Collateral Assistant Professor* BS 1978 and MS 1981 Virginia Commonwealth University; PhD 1986 University of Delaware

El-Shall, M. Samy (1989) *Professor* BS 1976 and MS 1980 Cairo University; PhD 1985 Georgetown University

Farrell, Nicholas P. (1993) *Professor* BS 1969 University College, Dublin; PhD 1973 University of Sussex

Fenn, John B. (1994) *Collateral Research Professor* BA 1937 Berea College; PhD 1940 Yale University

Houston, Todd (1996) *Assistant Professor* BS 1987 Graceland College; PhD 1993 University of Michigan

Muddiman, David C. (1997) *Assistant Professor* BS 1990 Gannon University; PhD 1995 University of Pittsburgh

Ottenbrite, Raphael M. (1967) *Professor* BS 1958 and MS 1960 Assumption University; PhD 1967 University of Windsor

Qu, Yun (1993) *Research Assistant Professor* MS 1982 and PhD 1986 Nanjing University

Ruder, Suzanne M. (1988) *Associate Professor* BA 1982 College of St. Benedict; PhD 1986 Washington State University

Rutan, Sarah C. (1984) *Professor* BS 1980 Bates College; MS 1983 and PhD 1984 Washington State University

Shillady, Donald D. (1970) *Professor* BS 1962 Drexel University; MS 1965 Princeton University; PhD 1970 University of Virginia

Silvers, Stuart J. (1974) *Associate Professor* BA 1957 Swarthmore College; PhD 1964 Yale University

Snedden, Albert T. (1977) *Professor and Associate Dean, College of Humanities and Sciences* BS 1968 Carnegie Mellon University; PhD 1975 Brandeis University

Turner, James (1981) *Professor* BA 1973 Brandeis University; PhD 1979 University of California, Los Angeles

Topich, Joseph A. (1976) *Associate Professor* BA Columbia University; PhD 1974 Case Western Reserve University

Vallarino, Lidia M. (1980) *Professor* PhD 1954 University of Milano, Italy

Watton, Stephen P. (1997) *Assistant Professor* BS 1985 King's College, London; PhD 1991 Northwestern University
Wright, Michael E. *Professor* BS 1979 San Diego State University; MS 1981 and PhD 1983 University of Arizona at Tucson

Emeriti Faculty

Stump, Billy L. *Professor Emeritus* BS Carson-Newman College; PhD University of Tennessee
Winters, Lawrence J. *Professor Emeritus* AB 1953 Washington University, St. Louis; PhD 1959 University of Kansas

The curriculum in chemistry prepares students for graduate study and for admission to schools of medicine, dentistry, and veterinary medicine. It also equips students to teach in secondary schools, or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers the bachelor of science program in chemistry. Under the bachelor of science program, two options are available: the chemical science program and the professional science program.

The **chemical science program** is tailored for the preprofessional study of the health sciences and other interdisciplinary areas where an emphasis on chemistry is sought.

Approved by the American Chemical Society Committee on Professional Training, the **professional chemist program** requires a greater concentration in chemistry. Upon satisfactory completion of degree requirements, students are certified by the American Chemical Society.

Extended Teacher Preparation Program

Chemistry majors interested in teaching careers in elementary, secondary, or special education can enroll in an extended program that leads to the simultaneous awarding of a bachelor's degree in chemistry and a master's degree in teaching. For detailed information on this program contact the School of Education, Office of Academic Services.

Preprofessional Study for the Health Sciences

With the proper selection of electives, both the BA and the BS degrees in chemistry satisfy admission requirements to most schools of medicine, dentistry, and veterinary medicine.

Master of Science and Doctoral Program in Chemistry

For more information about these programs see the *Graduate Bulletin*.

Degree Requirements – Bachelor of Science in Chemistry

The **Professional Chemists track** of the bachelor of science degree in chemistry requires a minimum of 120 credits, with at least 47 of those credits in chemistry.

For this program, German is recommended for the foreign language general education requirement. To deter-

mine the biology course to fulfill the General Education natural science requirement, students should consult with their adviser in the College Advising Center or their chemistry adviser.

In addition to courses required for the Bachelor of Science in Chemistry, additional courses that may be used in fulfillment of appropriate College of Humanities and Sciences general education requirements and Academic Campus requirements are also required. These courses and their recommended sequence are listed.

Freshman Year. CHE 101-102 General Chemistry and CHE L101-L102 General Chemistry Laboratory I, II; MAT 200 Calculus with Analytic Geometry. (In preparation for MAT 200, all students must take the Mathematics Placement Test. Depending on the results, the student may be placed in MAT 151 Precalculus Mathematics.)

Sophomore Year. CHE 309, L 309 Quantitative Analysis and Laboratory; CHE 301-302 Organic Chemistry and CHE L301-L302 Organic Chemistry Laboratory I, II; MAT 201 Calculus with Analytic Geometry; MAT 307 Multivariate Calculus; PHY 207-208 University Physics I, II, or with permission in special cases, PHY 201-202 General Physics.

Junior Year. CHE 303-304 Physical Chemistry, CHE L304 Physical Chemistry Laboratory; MAT 301 Differential Equations.

Senior Year. CHE 406 Inorganic Chemistry, CHE L406 Inorganic Chemistry Laboratory, CHE 409, L 409 Instrumental Analysis and Laboratory, CHE 510 Atomic and Molecular Structure, plus at least one course from CHE 401 Synthetic and Qualitative Organic Chemistry, CHE/BIC 403-404 Biochemistry, 3 credits of CHE 492 Independent Study, 3 credits of CHE 493 Chemistry Internship, or any CHE 500-level course for which the prerequisites have been met.

The **Chemical Science track** for the bachelor's degree in chemistry permits students to select more courses from other disciplines. With less stringent requirements in mathematics, physics, and chemistry, this program is ideally suited for students planning to study medicine or dentistry.

It requires a minimum of 120 credits, with at least 35 of those credits in chemistry. German is recommended as the foreign language general education requirement. To determine the biology course to fulfill the General Education natural science requirement, students should consult their adviser in the College Advising Center or their chemistry adviser.

In addition to the courses required for the bachelor's degree in chemistry, this program also requires courses that may be used to fulfill appropriate College of Humanities and Sciences General Education requirements and Academic Campus requirements. These courses and their recommended sequence are listed.

Freshman Year. CHE 101-102 General Chemistry and CHE L101-L102 General Chemistry Laboratory I, II; MAT 200 Calculus with Analytical Geometry. (In preparation for MAT 200, all students must take the Mathematics Placement Test. Depending on the results, the student may be placed in MAT 151 Precalculus Mathematics.)

Sophomore Year. CHE 309, L 309 Quantitative Analysis and Laboratory; CHE 301-302 Organic Chemistry and CHE L301-L302 Organic Chemistry Laboratory I, II; MAT 201 Calculus with Analytic Geometry; PHY 207-208 University Physics I-II; or PHY 201-202 General Physics.

Junior Year. CHE 303 Physical Chemistry; CHE 304 Physical Chemistry; CHE L304 Physical Chemistry Laboratory.

Senior Year. Approved chemistry electives three credits minimum – may include CHE 403/BIC 403 Biochemistry.

Transfer Students

Transfer students intending to major in chemistry must complete a minimum of nine credits of VCU chemistry courses at the 300, 400, or 500 level of which no more than three credits may be CHE 492 or CHE 493. This restriction applies to all chemistry degrees.

Minor in Chemistry

The minor in chemistry requires the following courses: CHE 101-102 and L101-L102 General Chemistry and Laboratory; CHE 301-302 and L301-L302 Organic Chemistry and Laboratory; and either CHE 309 and L309 Quantitative Analysis and Laboratory or CHE 303 Physical Chemistry. All 300-level chemistry courses must be taken at VCU. Consult course descriptions for prerequisites in mathematics and physics.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in chemistry. A full description of the program appears in Part XX of this *Bulletin*.

Courses in Chemistry

In chemistry laboratories each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

CHE 100 Introductory Chemistry. Semester course; 3 lecture and 1 problem session hour. 3 credits. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences. A course in the elementary principles of chemistry; required of all students without a high school chemistry background and who need to take CHE 101-102. (This course is also recommended for students who have a poor high school background in the sciences and who need to take CHE 101-102.)

CHE 101-102 General Chemistry. Continuous course; 3 lecture and 1 recitation hour. 4-4 credits. Prerequisite: CHE 100 or a satisfactory score on the Chemistry Placement Test. Pre or corequisite: MAT 151. Fundamental principles and theories of chemistry, including qualitative analysis.

CHE L101 General Chemistry Laboratory I. Continuous course; 3 laboratory hours. 1 credit. Pre or corequisite: CHE 101. Experimental work correlated with CHE 101.

CHE L102 General Chemistry Laboratory II. Continuous course; 3 laboratory hours. 1 credit. Pre or corequisite: CHE 102. Prerequisite: CHE L101. Experimental work includes qualitative analysis.

CHE 103-104 Introduction to Modern Chemistry. Continuous course; 3 lecture hours. 3-3 credits. For non-chemistry majors; may not be used as a prerequisite for advanced chemistry courses. Introduces fundamental principles of modern inorganic, organic, and biochemistry and relates these to the chemistry encountered in everyday life, medicine, and the environment.

CHE L103 Introduction to Modern Chemistry Laboratory I. Continuous course; 3 laboratory hours. 1 credit. Pre or corequisite: CHE 103. Experimental work correlated with CHE 103.

CHE L104 Introduction to Modern Chemistry Laboratory II. Continuous course; 3 laboratory hours. 1 credit. Pre or corequisite: CHE 104. Prerequisite: CHE L103. Experimental work correlated with CHE 104.

CHE 110 Chemistry and Society. Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are presented through the use of decision-making activities related to real-world societal issues. Not applicable for credit towards the BS major in Chemistry.

CHE L110 Chemistry and Society Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: CHE 110. Experimental work correlated with CHE 110. Not applicable for credit toward the BS in Chemistry degree.

CHE 112 Chemistry in the News. Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are used to interpret newspaper and magazine articles of current interest relating to chemistry in manufacturing, the global environment and medicine. Not applicable for credit towards the BS in Chemistry.

CHE L301 Organic Chemistry Laboratory I. Continuous course; 4 laboratory hours. 2 credits. Pre or corequisite: CHE 301. Experimental work correlated with CHE 301.

CHE 101, 102, L101, and L102 are prerequisites to all of the following chemistry courses.

CHE 301-302 Organic Chemistry. Continuous course; 3 lecture hours. 3-3 credits. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms, and stereochemistry.

CHE L302 Organic Chemistry Laboratory II. Continuous course; 4 laboratory hours. 2 credits. Prerequisite: CHE L301. Prerequisite or corequisite: CHE 302. Experimental work correlated with CHE 302.

CHE 303 Physical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 201-202 or 207, 208, and MAT 200-201. Ideal and nonideal gases, thermodynamics, free energy, and chemical equilibrium.

CHE 304 Physical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 303. Kinetics, solution thermodynamics, heterogeneous equilibria, electrochemistry, and introductory biophysical chemistry.

CHE L304 Physical Chemistry Laboratory. Semester course; 6 laboratory hours. 2 credits. Prerequisite: CHE 309. Corequisite: CHE 304.

CHE 309 Quantitative Analysis. Semester course; 2 lecture hours. 2 credits. Prerequisite: MAT 101 or equivalent. Theory and practice of gravimetric, volumetric, and instrumental analysis techniques, treatment of multiple equilibria in aqueous solutions.

CHE L309 Quantitative Analysis Laboratory. Semester course; 6 laboratory hours. 2 credits. Pre or corequisite: CHE 309.

CHE 391 Topics in Chemistry. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all chemistry topics courses may be applied to the major. A study of a selected topic in chemistry. See *Schedule of Classes* for specific topics to be offered and prerequisites.

CHE 401 Methods of Organic Synthesis. Semester course; 2 lecture and 6 laboratory hours. 4 credits. Prerequisites: CHE 301-302 and

L301-L302. Theory and laboratory practice of multistep organic syntheses. Spectroscopic analysis of organic compounds with emphasis on ¹H and ¹³C NMR and mass spectroscopy.

CHE 403/BIC 403 Biochemistry. Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 301-302 or equivalents with permission of instructor. A presentation of structural biochemistry, enzymology, biophysical techniques, bioenergetics, and an introduction to intermediary metabolism.

CHE 404/BIC 404 Biochemistry. Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 301-302 or equivalents with permission of instructor. A presentation of intermediary metabolism, regulation, molecular genetics, biochemistry of nutrition, and selected topics of physiological/medical significance.

CHE 406 Inorganic Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 303 and 304. Advanced treatment of atomic structure, chemical bonding, properties of the elements, metal complexes, acid-base theory, and related subjects.

CHE L406 Inorganic Chemistry Laboratory. Semester course; 1 lecture and 3 laboratory hours. 2 credits. Pre or corequisite: CHE 406. Examination of inorganic nonmetal, transition metal, and organometallic compounds using modern inorganic methods of synthesis and characterization.

CHE 409 Instrumental Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 301-302, 303-304, and 309 with laboratories. Theory and practice of modern spectrophotometric, electroanalytical, and chromatographic and nuclear magnetic resonance methods.

CHE L409 Instrumental Analysis Laboratory. Semester course; 4 laboratory hours. 1 credit. Prerequisites: CHE 301-302, 303-304, and 309 with laboratories.

CHE 491 Topics in Chemistry. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all chemistry topics courses may be applied to the major. A study of a selected topic in chemistry. See the *Schedule of Classes* for specific topics to be offered and prerequisites.

CHE 492 Independent Study. Semester course; variable credit. Maximum of four credits per semester; maximum total of eight credits for all independent study courses. Open generally to students of junior or senior standing who have completed CHE 302, CHE L302, and CHE 309 and have a minimum GPA of 2.5 in chemistry courses. A determination of the amount of credit and the written permission of both the instructor and the department must be procured prior to registration for the course. Investigation of chemical problems through literature search and laboratory experimentation. Written progress and final reports will be required.

CHE 493 Chemistry Internship. Semester course; variable credit. Maximum of three credits; one credit will be given for each 150 hours (approximately one month) of part-time or full-time chemical work experience. Prerequisite: open to students who have completed 24 credits in chemistry. Permission of adviser and department chair must be obtained prior to registration for the course. Acquisition of chemistry laboratory experience through involvement in a professional chemistry setting. Written progress and final reports will be required.

CHE 510 Atomic and Molecular Structure. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and PHY 208. Survey of the pertinent aspects of quantum mechanics. Line spectra, atomic structure, and molecular bonding.

Computer Science

The BS in computer science and the BS in computer science/mathematical sciences are offered by the Department of Mathematical Sciences. A minor in computer science is also available. For further information about these programs read the section of this *Bulletin* under the heading "Mathematical Sciences".

Department of Criminal Justice

Jay S. Albanese

Professor and Department Chair (1996) BA 1974 Niagara University; MA 1976 and PhD 1981 Rutgers University

Clement, Mary J. (1981) *Associate Professor* BA 1965 Bowling Green State University; MA 1966 Bowling Green State University; PhD 1977 Washington State University; MSW 1990 Virginia Commonwealth University; JD 1990 University of Richmond

Geary, David P. (1982) *Associate Professor* BA LaVerne College; MPA University of Southern California; PhD 1979 Marquette University

Gordon, Jill A. (1996) *Assistant Professor* BS 1990 Bowling Green State University; MS 1996 and PhD 1996 University of Cincinnati

Hague, James L. (1970) *Professor* BA 1963 Washington and Lee University; JD 1966 University of Michigan; LLD 1976 University of Virginia

Moriarty, Laura J. (1993) *Associate Professor* BCJ 1984 and MS 1985 Louisiana State University; PhD 1988 Sam Houston State University

Pelfrey, William V. (1992) *Professor* BA 1969 Auburn University; MS 1975 University of Alabama; PhD 1978 Florida State University

Smith, Michael R. (1997) *Assistant Professor* BS 1987 Virginia Commonwealth University; JD 1993 University of South Carolina School of Law; PhD 1996 Arizona State University

Emeriti Faculty

Hooker, James E. *Associate Professor Emeritus* BS 1964 and MS 1965 Washington State University

Keve, Paul W. *Professor Emeritus* BA George Washington University; MSW College of William & Mary

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, public service, and other helping professions, and/or prepare them to pursue studies in law. Career opportunities are available in federal, state, local, and private justice-related endeavors.

These careers include law enforcement, juvenile justice, corrections, and the courts. This department also prepares students wishing to enter law school and those wishing to pursue graduate studies in criminal justice or in several of the human services, usually related to justice. This department offers and encourages in-service justice employees, and others, to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest, and various skill courses designed to enhance the student's career opportunities. Through core courses and electives in the major approved by the student's adviser, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of their adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complimentary courses in other disciplines which can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, legal studies, juvenile justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

Degree Requirements

Bachelor of Science in Criminal Justice. The Bachelor of Science in Criminal Justice requires a mini-

imum of 120 credits, including 36 credits in criminal justice courses. Students will complete 18 credits in CORE courses and 18 credits in criminal justice electives.

Criminal Justice CORE – 18 credits

Required courses for all Criminal Justice Majors:

CRJ 181 Justice System Survey

CRJ 260 Criminal Law

CRJ 355 Foundations of Criminal Justice

CRJ 380 Research Methods in Criminal Justice

CRJ 475 Case Studies in Criminal Procedure

CRJ 480, 492 or 493 Application Component

Criminal Justice APPROVED ELECTIVES – 18 credits

Selected from other Criminal Justice courses with adviser's approval

Minor in Criminal Justice

The minor in criminal justice requires a minimum of 18 credits. Students desiring a minor in criminal justice must complete, with a "C" average overall, each of the following courses:

CRJ 181 Criminal Justice Survey

CRJ 260 Criminal Law

CRJ 355 Foundations of Criminal Justice

CRJ 475 Criminal Procedure

Criminal Justice elective*

Criminal Justice elective*

* CRJ 492 and 493 are not available to those minoring in criminal justice.

Master of Science in Criminal Justice

The graduate degree program in criminal justice is designed to provide advanced educational preparation for practitioners and students pursuing careers in criminal justice or forensic science. Such preparation includes understanding appropriate theoretical positions and concepts, and developing necessary professional skills. The master's degree requires either 36 or 39 credit hours. See the *Graduate Bulletin* for a more detailed description of this program and the Post-Baccalaureate Certificate program.

Courses in Criminal Justice

CRJ 181 Justice System Survey. Semester course; 3 lecture hours. 3 credits. Comprehensive overview of criminal justice; assesses the extent of crime; reviews law enforcement, judicial and correctional processes at all levels of government; discusses history and philosophy of public safety; evaluates career opportunities.

CRJ 252 Introduction to the Juvenile Justice System. Semester course; 3 lecture hours. 3 credits. This survey course studies all segments of juvenile justice and special procedures designed for young persons; recognizes the importance of proper handling of the juvenile by the police and the courts; reviews recent developments in juvenile rehabilitation.

CRJ 253 Introduction to Corrections. Semester course; 3 lecture hours. 3 credits. A survey of societal responses to the offender; traces the evolution of practices based on philosophies of retribution, punishment, and rehabilitation; reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system; introduces the emerging area of correctional programming within the community.

CRJ 254 Introduction to Policing. Semester course; 3 lecture hours. 3 credits. A survey of different facets of law enforcement including the

activities of public police agencies and private security organizations. Assesses changes in law enforcement philosophy and practices, police relationships with the public and the political arena, and anticipated future trends in policing.

CRJ 255 Introduction to Legal Studies. Semester course; 3 lecture hours. 3 credits. Overview of the American legal system, processes, terminology; analysis of historical and philosophical bases of law. Examines the systems that adjudicate criminal and civil law; considers the role of law in the functioning of the justice system.

CRJ 260 Criminal Law. Semester course; 3 lecture hours. 3 credits. Deals with the definition and processing of substantive offenses along with the bases of criminal liability, defenses, and complicity. Covers the scope of individual rights under due process, emphasizing arrest, interrogations, search and seizure.

CRJ 305 Policing Theories and Practice. Semester course; 3 lecture hours. 3 credits. An overview of the nature and application of law enforcement theory. Examines the theoretical underpinnings of a variety of law enforcement practices, with emphasis on evolving trends.

CRJ 324 Courts and the Judicial Process. Semester course; 3 lecture hours. 3 credits. Examines the systems that adjudicate criminal and civil law; includes constitutional authority, jurisdictions, and trial processes, with particular emphasis on reform in court administration, disposition without trial, and sentencing.

CRJ 350 Evaluation and Treatment of the Offender. Semester course; 3 lecture hours. 3 credits. An analysis of the issues and procedures involved in evaluating individual differences in offenders and among classes of offenders; current diagnostic and treatment methods are discussed; introduces the student to case analysis and correctional counseling techniques. Includes analysis of evaluation and treatment resources external to corrections.

CRJ 351 Community-Based Correctional Programs. Semester course; 3 lecture hours. 3 credits. A comprehensive review of various community-based rehabilitation and treatment efforts; includes analysis of probation, parole, work release, halfway houses, and other methods of reintegrating the offender into society.

CRJ 352 Crime and Delinquency Prevention. Semester course; 3 lecture hours. 3 credits. Review and analysis of the problems associated with prevention of crime and delinquency, viewed in a total systems context. Programs and activities involving citizen, community, and agency interrelationships will be developed and examined. Students are responsible for preparing and evaluating projects with crime preventive goals.

CRJ 355 Foundations of Criminal Justice. Semester course; 3 lecture hours. 3 credits. An examination of the intellectual underpinnings of the criminal justice system. This will include analysis of evolving values and ideas regarding social control, individual and collective responsibilities and rights, the role of punishment, politics and the law, practitioners as public servants, and criminological and other foundations of the criminal justice system.

CRJ 358 Lawyer's Role in the Justice System. Semester course; 3 lecture hours. 3 credits. Examines the multiple responsibilities of lawyers from an historical and contemporary perspective. The basic techniques of the lawyer's craft will be studied with emphasis placed on case advocacy, negotiation skills and legal reasoning, and problem solving.

CRJ 363 Correctional Law. Semester course; 3 lecture hours. 3 credits. Examines the legal rights of both the offender and the correctional worker. Attention is given to case law and legal decisions affecting policies and procedures in probation, correctional settings, and parole. Trends influencing correctional programming and management activities will be projected.

CRJ 370 Criminalistics and Crime Analysis. Semester course; 3 lecture hours. 3 credits. A comprehensive evaluation of current developments in research, instrumentation, and laboratory technology utilized to detect, identify, analyze, and compare demonstrate evidence.

CRJ 378 Juvenile Justice Law and Process. Semester course; 3 lecture hours. 3 credits. Examines the juvenile court as an institution; its jurisdiction and procedures. Considers intake, pretrial diversion, and hearings, as well as rights and liabilities of the delinquent, dependent and neglected child. Contrasts juvenile and adult law; projects future impact of the court.

CRJ 380 Research Methods in Criminal Justice. Semester course; 3 lecture hours. 3 credits. Prerequisites: statistics or permission of instructor. Designed to familiarize the student with current and applied research methods in criminal justice, including the application of data and information processing techniques and procedures; analyzes research in criminal justice journals and government reports; and enhances the capability to evaluate contemporary research.

CRJ 382/WST 382 Women in the Justice System. Semester course; 3 lecture hours. 3 credits. Surveys the special situation of women in the justice system as offenders, as victims, and as professional practitioners. Applicable laws and public policy are studied in detail. Issues are punctuated by field trips to juvenile/adult programs and institutions.

CRJ 394 Field Service in Criminal Justice. 1 credit. Designed to provide the student with an opportunity to participate as a volunteer worker in a criminal justice agency. Offers actual experience as an agency volunteer under the general supervision of a faculty member. An application is required a semester in advance. Graded pass/fail.

CRJ 432 Criminal Justice: Organizations. Semester course; 3 lecture hours. 3 credits. Considers the behavioral dimensions of administrations in criminal justice and public safety agencies. Examines the concepts of leadership and decision making and the effect of environmental dynamics in the management of the criminal justice system.

CRJ 434 Police Administration. Semester course; 3 lecture hours. 3 credits. Examines major management concepts and principles with special emphasis on consideration of law enforcement. Policies and procedures formulated and followed by managers in law enforcement settings will be evaluated from a structural as well as a functional perspective. Contemporary and anticipated future problems, challenges and trends facing police managers will be addressed.

CRJ 463 Comparative Criminal Justice Systems. Semester course; 3 lecture hours. 3 credits. Study of national and international criminal justice systems with an emphasis on historical, cultural, and operational comparisons. Contemporary research relating to law enforcement, adjudicative, and correctional systems will be considered.

CRJ 468 Economic Offenses and Organized Crime. Semester course; 3 lecture hours. 3 credits. Analysis of the types of offenses which occur in the business and governmental work and the consequences of illegal practices. Primary attention will address the public sector through the methods utilized to detect and investigate criminal activities affecting governmental units. Relationships to organized crime will be described for each of the specific topics and techniques.

CRJ 475 Case Studies in Criminal Procedure. Semester course; 3 lecture hours. 3 credits. Analyzes case studies reflecting the supervisory role of the courts over the prosecutorial use of testimonial and non-testimonial evidence; examines by actual cases the judicial interpretive processes by which the public safety is balanced with individual rights.

CRJ 480 Senior Seminar. Semester course; 3 lecture hours. 3 credits. A capstone course designed to assist students to apply and to think critically about current knowledge regarding crime, crime trends, law, law enforcement, the adjudication process, corrections, and crime prevention. Scenarios, research, projections, and evaluation of different viewpoints will be employed to develop the student's ability to assess methods of argumentation, use information, and apply existing knowledge to new fact situations. A writing intensive course restricted to seniors in criminal justice.

CRJ 491 Topics in Criminal Justice. Semester course; 1-3 lecture hours. 1-3 credits. In-depth examination of selected administration of justice topics. See the *Schedule of Classes* for specific topics and prerequisites.

CRJ 492 Directed Individual Study. Semester course; variable; 1, 2, 3 credits. Maximum total of six credits. Provides an independent study opportunity for the adult student who is (or was) employed in a criminal justice, safety, or risk administration position and who does not require internship or volunteer experience. Additionally, it is available to all other CRJ students who are seniors and have a 3.0 or above GPA (with permission of department chair) as a substitute for a major elective course.

CRJ 493 Internship. Semester course; 3 or 6 credits. Field internship allows the student to relate theory to practice through observation and experience; must be performed in an approved agency or organizational setting under the supervision of a faculty member. An application is required a semester in advance. Graded pass/fail.

Department of Economics

John H. Bowman

Professor and Department Chair (1981) BS, MA and PhD 1973
Ohio State University

Economics, the science of making choices, is the study of how the goods and services we want get produced and how they are distributed.

The Department of Economics offers a Bachelor of Science in Economics conferred by the College of Humanities and Science with a core of liberal arts courses, as well as a BS in economics conferred by the School of Business with a core of business courses. For further information on this second program see the School of Business section of this *Bulletin*.

The bachelor's degree in economics conferred by the College of the Humanities and Sciences prepares students for careers as economists, or for areas such as public administration, social service, the financial sector, and business. It also prepares students for graduate work in economics and for graduate work in professional schools such as law, public administration, and medicine.

Degree Requirements

Bachelor of Science in Economics. The bachelor of science curriculum in economics requires a minimum of 120 credits, with at least 33 of those credits in the major and three credits in STA 210 Basic Practice of Statistics.

Students majoring in economics must complete ECO 210-211 Principles of Economics; ECO 301 Microeconomic Theory; ECO 302 Macroeconomic Theory; ECO 307 Money and Banking; ECO 489 Senior Seminar in Economics; STA 210 Basic Practice of Statistics; and an additional 15 credits of electives in upper-level (300-400) economics courses.

In addition to these requirements, students in this program must also take one course in computer science (CSC), preferably CSC 128 Computer Concepts and Applications. Students must also complete two courses in mathematics – BUS 111 Basic Mathematics for Behavioral, Social, and Management Sciences and BUS 112 Elements of Calculus for Behavioral, Social, and Management Sciences. MAT 141 Algebra with Applications or MAT 151 Precalculus Mathematics may be taken in place of BUS 111. Course selection depends on the Mathematics Placement Test score.

In selecting approved electives to meet the general requirements of the College of Humanities and Sciences,

students should select courses related to the economics major – specifically, courses in accounting, mathematics and statistics, philosophy, history, political science, sociology, anthropology, and finance. Students should focus their electives on one or two of these subjects.

Juniors, seniors, and graduate students who have completed baccalaureate degrees are eligible for enrollment in most upper-level economics and business courses (BUS or ECO 300-400 levels).

Minor in Economics

This minor, offered through the College of Humanities and Sciences, requires at least 18 credits in the minor field including ECO 210-211 Principles of Economics; one or more courses from ECO 301 Microeconomic Theory, ECO 302 Macroeconomic Theory, or ECO 303 Managerial Economics. The remaining courses to fill this requirement must be chosen from upper-level (300-400) economics courses.

Cooperative Education Program

This program is available to qualifying students pursuing undergraduate degrees in economics. A full description of the program appears in Part XX of this *Bulletin*.

Department of English

Richard A. Fine

Professor and Department Chair (1979) AB 1973 Brown University; MA 1975 and PhD 1979 University of Pennsylvania

David Latané

Associate Professor and Associate Chair (1984) BA 1974 Roanoke College; MA 1976 University of Vermont; PhD 1983 Duke University

Elizabeth J. Cooper

Professor and Director of Composition and Rhetoric (1991) BA 1962 and MA 1963 University of Arkansas, Fayetteville; PhD 1976 University of North Carolina, Chapel Hill

Catherine E. Ingrassia

Associate Professor and Director of the MA Program (1992) BA 1984 Grinnell College; MA 1987 and PhD 1992 University of Texas, Austin

Lawrence F. Laban

Assistant Professor and Director of Undergraduate Studies (1971) BA 1967 City College of New York; PhD 1973 Indiana University

B. Marita Golden

Professor and Director of Creative Writing (1994) BA 1972 American University; MS 1973 Columbia University

Berry, Boyd M. (1974) *Associate Professor* BA 1961 Harvard College; MA 1962 and PhD 1966 University of Michigan
 Browder, Laura (1994) *Assistant Professor* BA 1982 Brown University; MA 1985 Boston University; PhD 1993 Brandeis University
 Coppedge, Walter R. (1968) *Professor* BA 1952 University of Mississippi; BLitt 1958 Oxford University; MA 1963 Memphis State University; MA 1967 and PhD 1968 Indiana University
 Cornis-Pop, Marcel (1988) *Professor* BA and MA 1968 University of Cluj, Romania; PhD 1979 University of Timisoara, Romania
 DeHaven, Thomas (1990) *Professor* BA 1971 Rutgers University; MFA 1973 Bowling Green State University
 Devlin, Joseph (1996) *Instructor* BA 1982 State University of New York, Albany; MA 1985, MPhil 1989 and PhD 1995 Columbia University
 Donovan, Gregory E. (1983) *Associate Professor* BA University of Missouri at Columbia; MA 1979 University of Utah; PhD 1983 State University of New York, Binghamton

Duke, Elizabeth A. (1966) *Associate Professor* BA 1958 Longwood College; MA 1960 University of Virginia; PhD 1968 University of Iowa
 Duke, J. Maurice (1966) *Professor* BA 1962 College of William & Mary; MA 1965 and PhD 1968 University of Iowa
 Frankel, Nicholas (1997) *Assistant Professor* BA 1984 Oxford; MA 1988 University of Southern California; PhD 1994 University of Virginia
 Griffin, Claudius W. (1969) *Professor* BS 1958 and MA 1960 University of Richmond; PhD 1972 Indiana University
 Harkness, Marguerite (1975) *Associate Professor* BS University of Illinois; MA 1971 and PhD 1974 State University of New York, Binghamton
 Hodges, Elizabeth S. (1989) *Associate Professor* BA 1975 Syracuse University; MA 1981 Pennsylvania State University; PhD 1988 University of Pennsylvania
 Hummer, T. R. (1997) *Professor* BA 1972 and MA 1974 University of Southern Mississippi; PhD 1980 University of Utah
 Keller, Michael A. (1989) *Lecturer* BA 1985 James Madison University; MFA 1989 Virginia Commonwealth University
 Kinney, James J. (1977) *Professor* BA 1964 St. Bonaventure University; PhD 1972 University of Tennessee
 Kuhn, Elisabeth D. (1989) *Associate Professor* MA 1981 University of Frankfurt, Germany; MJ 1988 and PhD 1989 University of California, Berkeley
 Longest, George C. (1963) *Associate Professor* BA 1960 and MA 1961 University of Richmond; PhD 1969 University of Georgia
 Mangum, Anthony B. (1971) *Professor* BA 1965 University of North Carolina; MA and PhD 1974 University of South Carolina
 Morse, Charlotte C. (1976) *Professor* AB 1964 Brown University; MA 1968 and PhD 1970 Stanford University
 Ockerstrom, Lolly (1997) *Instructor* BA 1973 Park College; MA 1981 and PhD 1997 Northeastern University
 Ogel, L. Terry (1988) *Professor* BA 1961 Monmouth College; MA 1963 Kent State University; PhD 1969 University of Wisconsin
 Pendergast, John S. (1997) *Instructor* BA 1986 Benedictine College; MA 1988 and PhD 1994 University of Missouri, Columbia
 Perry, Patricia H. (1993) *Assistant Professor* BA 1979 and MLS 1982 North Carolina Central University; PhD 1991 State University of New York, Stony Brook
 Priebe, Richard K. (1973) *Professor* BA 1964 Franklin and Marshall College; MS 1968 University of Michigan; PhD 1973 University of Texas, Austin
 Sange, Gary R. (1973) *Associate Professor* BA 1961 and MA 1963 San Francisco State College; MFA 1973 University of Iowa
 Sharp, Nicholas A. (1971) *Assistant Professor* BA 1966 University of Kansas; MA 1968 and PhD 1971 Ohio State University
 Tester, William (1997) *Assistant Professor* BA 1984 Columbia University; MFA 1995 Syracuse University
 Watson, Marsha (1997) *Instructor* BS 1989 and MA 1991 Northern Illinois University; PhD 1997 University of Wisconsin, Milwaukee
 Woodlief, Annette M. (1972) *Associate Professor* BA 1961 and MA 1963 Wake Forest University; PhD 1972 University of North Carolina

Emeriti Faculty

Armour, Robert A. *Professor Emeritus* BA Randolph-Macon College; MA Vanderbilt University; PhD University of Georgia
 Dance, Daryl C. *Professor Emerita* AB Virginia State College; MA Virginia State College; PhD 1971 University of Virginia
 Marshall, Paule *Professor Emeritus* BA Brooklyn College
 Pendleton, James D. *Professor Emeritus* BS Davidson College; MA University of North Carolina
 Reynolds, Elizabeth R. *Professor Emerita* BA Winthrop College; MA Columbia University; PhD University of South Carolina
 Whitesell, J. Edwin *Professor Emeritus* AB Randolph-Macon College; MA and PhD Harvard University

The purpose of the Department of English is to teach students to see their worlds with clarity and respond to them with sensitivity, through reading and writing. Students are invited to read and explore a diversity of texts created in different times and voices and then to respond to these texts variously and critically, situating them within their contexts and discerning their important aesthetic features, rhetorical elements, and social functions.

Students in this department are also encouraged to express themselves in expository or imaginative works that engage thought and feeling, evince purpose clearly, marshal appropriate evidence, and observe principles of rhetorical decorum.

The Department of English offers the Bachelor of Arts in English, which provides a broad liberal arts base for advanced study and for careers in academic and professional areas.

English majors interested in careers in early, middle, secondary, or special education can enroll in the Extended Teacher Preparation Program which results in the simultaneous awarding of a bachelor's degree in English and a master's degree in teaching. For more information about this program administered jointly by the College of Humanities and Sciences and the School of Education contact the School of Education's Office of Academic Services.

The department also offers required and elective courses in English composition, language, and literature for English majors and for students in other programs.

Degree Requirements

Bachelor of Arts in English. The Bachelor of Arts in English requires a minimum of 120 credits, with at least 36 of those credits in the major, three of which fulfill the general education literature requirement. A minimum of 33 credits must be taken in upper-level (300, 400, 500) English courses; six of those credits may be taken in upper-level foreign literature in the original language or foreign literature in English translation (FLT). ENG 101-102 (or equivalent) do not count toward the major.

English majors should distribute their course work as follows:

1. ENG 301 English Studies Modules (3 credits)

2. Linguistics or Writing (3 credits)

ENG 302 Legal Writing
 ENG 304 Advanced Composition
 ENG 305 Creative Writing: Genres
 ENG 307 Teaching Writing Skills
 ENG/BUS 327 Business and Technical Report Writing
 ENG/THE 426-427 Playwriting
 ENG 435,436 Creative Writing: Poetry
 ENG 437,438 Creative Writing: Fiction
 ENG/LIN 449 Introduction to Linguistics
 ENG/LIN 450 Modern Grammar
 ENG/LIN 451 History of English Language
 ENG/WST/LIN 452 Language and Gender
 ENG/LIN 453 Introduction to Modern Rhetoric

3. Literature and Criticism (21 credits)

To ensure that students study a range of national, historical and cultural literatures, among the 21 hours required, students must include 6 credits in literature prior to 1700, 6 in literature 1700-1900, 6 credits in British literature, 3 credits in American literature, and 3 credits in the literature of diversity. Please note that individual courses often fall into more than one of these categories, offering students additional flexibility.

ENG 313 Southern Literature (AL)
 ENG/AAS 314 African-American Literature (AL), (D)
 ENG 315 The Modern Novel

ENG 316 Modern Poetry
 ENG 317 Modern Drama
 ENG 318 Contemporary Poetry
 ENG 320 Eighteenth-Century British Literature (BL, 1700-1900)
 ENG 321 Romantic Literature (BL, 1700-1900)
 ENG 322 Victorian Poetry (BL, 1700-1900)
 ENG 323 Twentieth-Century British Literature (BL)
 ENG 335 Glories of the English Renaissance (BL, pre-1700)
 ENG 350 Approaches to Literature
 ENG/EDU 351 Children's Literature I*
 ENG/RST 361 The Bible as Literature (pre-1700)
 ENG/AAS 363 African Literature (D)
 ENG/AAS 365 Caribbean Literature (D)
 ENG 367 Eastern Thought in Western Literature
 ENG 371 American Literature: Colonial and Federal (AL, 1700-1900)
 ENG 372 American Literature: American Romanticism (AL, 1700-1900)
 ENG 373 American Literature: Realism and Naturalism (AL, 1700-1900)
 ENG 374 American Literature: Early Twentieth Century (AL)
 ENG 375 American Literature: Contemporary (AL)
 ENG 381 Fiction into Film
 ENG/WST 384 Women Writers (D – other topic)
 ENG/ENS 385 Nature Writing (AL)
 ENG/ANT 386 Introduction to Folklore (D)
 ENG 391 Topics in Literature (by specific topic)
 ENG 400 Shakespeare: The Early Works (BL, pre-1700)
 ENG 401 Shakespeare: The Later Works (BL, pre-1700)
 ENG 402 Chaucer (BL, pre-1700)
 ENG 403 Milton (BL, pre-1700)
 ENG 407 Medieval Epic and Romance (pre-1700)
 ENG 409 Medieval Studies (pre-1700, other by topic)
 ENG 410 Renaissance Studies (pre-1700, other by topic)
 ENG 411 Eighteenth-Century British Studies (BL, 1700-1900)
 ENG 414 American Novel and Narratives (AL)
 ENG 415 Eighteenth-Century English Novel (BL, 1700-1900)
 ENG 416 Nineteenth-Century English Novel (BL, 1700-1900)
 ENG 423 English Drama, 900-1642 (BL, pre-1700)
 ENG 424 Restoration and Eighteenth-Century Drama (BL, 1700-1900)
 ENG 429 Form and Theory of Poetry
 ENG 430 Form and Theory of Fiction
 ENG/EDU 433 Literature for Adolescents*
 ENG 491 Topics in Literature (by specific topic)
 AMS 391 Topics in American Studies (AL)
 AMS 394 Perspectives in American Studies (AL)

* English majors may count either ENG 351 or ENG 433, but not both toward their major.

4. Electives (6 credits)

Any upper-level English, foreign literature, or foreign literature in translation (FLT) courses may be used as general electives.

5. At least 3 credits must be taken in courses designated each semester as Senior Seminars (S). These are small classes in which students produce sustained writing projects.

Collateral Requirements

In addition to the ENG courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

Minor Requirements – General

English majors may minor in writing, but not in English.

Minor in English. The minor in English consists of 18 credits in upper-level (300-400) English courses, with at least 3 credits from each of the following areas: British literature; American literature; linguistics, criticism, or advanced writing; and comparative literature. Three credits may be taken in foreign literature in English translation and three in independent study. However, ENG 300, Practical Writing Workshop, does not count towards the minor.

Minor in Writing. The minor in writing requires 18 credits in the writing courses listed in this paragraph. ENG 304 Advanced Composition, is required and should be taken as early as possible. The other 15 credits must be from creative writing (ENG 305, 426, 427, 435, 436, 437, and 438); and/or from professional writing and rhetoric (ENG 302, BUS/ENG 327, ENG 453, ENG 493 and MAC 203, 300, 305, and 341).

Master of Arts in English and Master of Fine Arts in Creative Writing

For information about the graduate program in English, see the *Graduate Bulletin*.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in English. A full description of this program appears in Part XX of this *Bulletin*.

Courses in Comparative Literature

CML 301 Introduction to Comparative Literature. Semester course; 3 lecture hours. 3 credits. Prerequisite: one course in foreign or English literature. An introduction to the history theory, and practice of comparative literature, with emphasis on practical exercises in the application of comparative methods.

CML 391/FLT 391 Topics in Comparative Literature. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits in all topics courses at the upper-level division. An in-depth study of selected topics in comparative literature. See the *Schedule of Classes* for specific topics to be offered each semester.

CML 421, 422/ENG 421, 422 Comparative Literature. Semester courses; 3 lecture hours. 3, 3 credits. A comparative study of the form and content of the literature of Western civilization in translation with some attention to the dominant influence on and interrelationships between English and continental literatures. First semester: ancient, Medieval, and Renaissance. Second semester: Neoclassical, Romantic, and Modern.

CML 485 Seminar in Comparative Literature. Semester course; 3 lecture hours. 3 credits. Prerequisites: ENG 201-202 or equivalent, ENG 350, and 12 additional upper-division credits in English, foreign literature ARH, CML, FLT, or THE courses. Students will prepare individual papers or projects in comparative literature. The course will begin with some attention to comparative methods and procedures of independent work. Designed for comparative literature majors.

CML 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in CML. Open generally only to students of junior or senior standing who have completed 12 upper-division credits in English, foreign literature, ARH, CML, FLT, or THE courses. Determination of course content and permission of the instructor must be obtained prior to registration for the course. The course is designed to give students an opportunity to become involved in independent

study in a specific area of comparative literature in which they have an interest.

Courses in English

ENG 001 Fundamentals of English Composition. Semester course; 3 lecture hours. 0 credits. A course designed to prepare students for ENG 101 Composition and Rhetoric by teaching them to write clear sentences and well-developed, well-organized paragraphs. (This course is recommended for students who have not previously studied grammar and composition extensively and will be required for those students whose English placement scores indicate inadequate preparation in grammar and composition.)

ENG 002 English as a Second Language. Semester course; 2 laboratory and 2 lecture hours. 0 credits. Instruction in English pronunciation, grammar, vocabulary, and writing for students whose native language is not English. Primarily for students whose English as a second language skills are at the intermediate level.

ENG 101 Composition and Rhetoric I. Semester course; 3 lecture hours. 3 credits. Introduction to effective writing and critical analysis.

ENG 114 English Grammar and Usage. Semester course; 3 lecture hours. 2 credits. Prerequisite: ENG 101 or permission of the director of composition and rhetoric. An intensive study of the fundamentals of English grammar, usage, punctuation, mechanics, and spelling through drills and written exercises. This course is not equivalent to English 101 or 102, and these credits may not be used to satisfy the College of Humanities and Sciences degree requirement in composition and rhetoric.

ENG 101 is prerequisite to all 200-level English courses; three (3) credits in 200-level literature courses (or equivalent) are prerequisite to all 300- and 400-level English courses.

ENG 200 Composition and Rhetoric II. Semester course; 3 lecture hours. 3 credits. Prerequisites: English 101 and sophomore standing (completion of 24 credits). Principles and practices of critical reading, analysis, and writing; methods and criteria for finding and evaluating information from a variety of printed and electronic sources; appropriate ways to use and document outside evidence in academic writing.

ENG 201 Western World Literature I. Semester courses; 3 lecture hours. 3 credits. An introduction to the literature of Western cultures from the Ancient World through the Renaissance, emphasizing connections among representative works.

ENG 202 Western World Literature II. Semester course; 3 lecture hours. 3 credits. An introduction to the literature of Western cultures from the end of the Renaissance to the present, emphasizing connections among representative works.

ENG 203 British Literature I. Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the British Isles from the Middle Ages through the eighteenth century, emphasizing connections among representative works.

ENG 204 British Literature II. Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the British Isles from the late eighteenth century to the present, emphasizing connections among representative works.

ENG 205 American Literature I. Semester courses; 3 lecture hours. 3 credits. An introduction to the literature of the United States from its origins through the 1860's, emphasizing connections among representative works.

ENG 206 American Literature II. Semester course; 3 lecture hours. 3 credits. An introduction to the literature of the United States from the 1860's to the present, emphasizing connections among the representative works.

ENG 215 Readings in Literature. Semester course; 3 lecture hours. 3 credits. An introduction to literature through the study of two or more types, such as poetry, fiction, drama, or essay.

ENG 216 Readings in Narrative. Semester course; 3 lecture hours. 3 credits. An introduction to literature with the focus on the art and structure of the narrative in a variety of forms.

ENG 236/WST 236 Women in Literature. Semester course; 3 lecture hours. 3 credits. An introduction to literature by and/or about women.

ENG 241 Shakespeare's Plays. Semester course; 3 lecture hours. 3 credits. An introduction to literature, with the focus on Shakespeare's plays, including their art and dramatic conventions.

ENG 291 Topics in Literature. Semester course; 3 lecture hours. 3 credits. Maximum six credits in all topics courses at the 200 level. An introduction to literature through the in-depth study of a selected topic or genre. See the *Schedule of Classes* for specific topics to be offered.

ENG 300 Practical Writing Workshop. Semester course; 3 workshop hours. 1-3 credits, 5, 10, or 15 weeks. Prerequisite: ENG 101, 102. Practical Writing Workshop is a variable credit course covering organization, writing, and revision skills useful in upper-level university classes and on-the-job situations. Classes will be conducted as workshops, discussions, and lectures. Assignments may consist of essays, revision exercises, summaries, critical reviews, letters, and resumes. Does not satisfy the Humanities and Sciences minimum competency writing requirements or count toward requirements for the English major or minor.

ENG 301 English Studies Modules: _____. One-half semester course; 1.5 lecture hours. 1.5 credits per module. Students may not receive credit for 2 modules on same topic. Prerequisite: ENG 101 and three credits of literature at the 200 level (or equivalent). A series of short courses which focus on skills helpful early in the English major, introducing students to the ways in which language is used in literary texts and including practice in shaping written responses to those texts. See the *Schedule of Classes* for module topics.

ENG 302 Legal Writing. Semester course; 3 lecture hours. 3 credits. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow, and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENG 304 Advanced Composition. Semester course; 3 lecture hours. 3 credits. An advanced study of the writing of nonfiction prose, such as interviews, reviews and criticism, satire and humor, scientific and analytic writing. Techniques of rewriting and publishing will also be considered. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENG 305 Creative Writing: Genres. Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Sections: poetry, fiction, drama, or multigenre. A workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course. See the *Schedule of Classes* for specific genres to be offered each semester. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENG 307/EDU 307 Teaching Writing Skills. Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation, and topic construction. Includes extensive journal and essay writing. May not be used to satisfy the literature requirements of the College of Humanities and Sciences.

ENG 313 Southern Literature. Semester course; 3 lecture hours. 3 credits. A study of the literature of the South with attention to writers such as Byrd, Poe, Chopin, Faulkner, Welty, Wolfe, O'Connor, Walker, and Percy.

ENG 314/AAS 314 African-American Literature. Semester course; 3 lecture hours. 3 credits. An examination of the culture and literature of African-Americans from their roots in Africa and the African Diaspora to the present day. Authors may include Wheatley, Jacobs, Wilson, Brown, Dubois, Hurston, Wright, Gaines, and Morrison.

ENG 315 The Modern Novel. Semester course; 3 lecture hours. 3 credits. An examination of the novel, chiefly British and European, in the twentieth century.

ENG 316 Modern Poetry. Semester course; 3 lecture hours. 3 credits. A study of British and American poetry in the first half of the twentieth century.

ENG 317 Modern Drama. Semester course; 3 lecture hours. 3 credits. A study of the development of Continental, English, and American drama since Ibsen.

ENG 318 Contemporary Poetry. Semester course; 3 lecture hours. 3 credits. A study of British and American poetry from approximately 1950 to the present for the purpose of determining the aesthetic and thematic concerns of contemporary poets.

ENG 320 Eighteenth-Century British Literature. Semester course; 3 lecture hours. 3 credits. A survey of representative poetry, drama and prose from the Restoration and eighteenth century, usually including Behn, Dryden, Pope, Swift, Johnson, and Gay.

ENG 321 Romantic Literature. Semester course; 3 lecture hours. 3 credits. Exploration of the literature and the cultural phenomenon of Romanticism in Britain during the years 1783-1873, with reading from poets such as Blake, Wordsworth, Byron, and Shelley, and from a variety of other writers.

ENG 322 Victorian Poetry. Semester course; 3 lecture hours. 3 credits. A survey of the poetry of Victorian Britain, usually including Tennyson, the Brownings, Arnold, and the pre-Raphaelites.

ENG 323 Early Twentieth-Century British Literature. Semester course; 3 lecture hours. 3 credits. Representative British and Irish poetry, fiction, and drama of the twentieth century, including such writers as Yeats, Joyce, Shaw, Lawrence, Conrad, Auden, Forster, and Woolf.

ENG 324 Later Twentieth-Century British Literature. Semester course; 3 lecture hours. 3 credits. Representative British and Irish fiction, drama, and poetry of the later twentieth century, including such writers as Thomas, Golding, Lessing, Beckett, Heaney, Larkin, Fowles, Churchill, and Murdoch.

ENG 327/BUS 327 Business and Technical Report Writing. Semester course; 3 lecture hours. 3 credits. Development of critical writing skills used in business, science, technology, and government, including instructions, descriptions, process explanations, reports, manuals, and proposals. The course will include such topics as communication theory, technical style, illustrations, formats for proposals, reports, and manuals. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

ENG 335 The Glories of the English Renaissance. Semester course; 3 lecture hours. 3 credits. An introduction to some of the most exciting works of a dynamic age, providing an understanding not only of the achievements of Shakespeare, Spenser, and Milton, but also of the literary period from which they emerged.

ENG 350 Approaches to Literature. Semester course; 3 lecture hours. 3 credits. The study and application of various critical approaches such as historical, sociocultural, psychological, archetypal, and formalist, used in analyzing literary works.

ENG 351/EDU 351 Children's Literature I. Semester course; 3 lecture hours. 3 credits. Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales, and poetry, as well as a survey of the history of children's literature. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

ENG 361/RST 361 The Bible as Literature. Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible.

ENG 363/AAS 363 African Literature. Semester course; 3 lecture hours. 3 credits. A survey of the literature of Africa with particular

emphases on fiction and on West Africa. Some attention will also be given to orature.

ENG 365/AAS 365 Caribbean Literature. Semester course; 3 lecture hours. 3 credits. A survey of West Indian writings. Attention will be given to African, European, and Amerindian influences, as well as to the emergence of a West Indian literary tradition.

ENG 367 Eastern Thought in Western Literature. Semester course; 3 lecture hours. 3 credits. An exploration of the influence of Eastern thought on selected Western writers, with emphasis on the period from the nineteenth century to the present.

ENG 371 American Literature: Colonial and Federal. Semester course; 3 lecture hours. 3 credits. A study of the most important writings from the founding of the first colonies to the establishment of the federal government with attention to such authors as Bradford, Byrd, Bradstreet, Taylor, Edwards, and Franklin.

ENG 372 American Literature: American Romanticism. Semester course; 3 lecture hours. 3 credits. A study of the writings of the American romantics in the nineteenth century, with attention to such authors as Poe, Emerson, Thoreau, Fuller, Hawthorne, Melville, Dickinson, and Whitman.

ENG 373 American Literature: Realism and Naturalism. Semester course; 3 lecture hours. 3 credits. A study of writings from the end of the Civil War to World War I, with attention to such authors as Dickinson, Clemens, Howell, James, Wharton, Crane, Norris, Dreiser, Chopin and Chesnut.

ENG 374 American Literature: Early Twentieth Century. Semester course; 3 lecture hours. 3 credits. A study of the most important writings between World War I and World War II, with attention to such authors as Anderson, Frost, Eliot, Stein, Glasgow, Fitzgerald, Wright, Cather, Hemingway, O'Neill, Hurston, Toomer, and Faulkner.

ENG 375 American Literature: Contemporary. Semester course; 3 lecture hours. 3 credits. A study of American writings since the end of World War II, with attention to such authors as Albee, Auster, Baldwin, Carver, Didion, Ellison, Ginsberg, Lowell, Morrison, Percy, Plath, Salinger, and Walker.

ENG 381 Fiction into Film. Semester course; 2 lecture and 1 laboratory hour. 2 or 3 credits, 10 to 15 weeks (decided in advance). A study of the translation of literature into film. Topical approaches vary from semester to semester. Consideration is given to the literature in its original form and to the methods of translating it into film.

ENG 384/WST 384 Women Writers. Semester course; 3 lecture hours. 3 credits. A study of selected literature written by women and about women writers. May be repeated once when different groups of writers are studied.

ENG 385/ENS 385 Nature Writing. 3 lecture hours. 3 credits. A study of the literary genre of nature writing in English.

ENG 386/ANT 386 Introduction to Folklore. Semester course; 3 lecture hours. 3 credits. A survey of the basic forms of folklore including proverbs, riddles, ballads, folktales, legends, myths, and games. The survey will also include approaches to collecting material and examining its literary, social, and historical significance.

ENG 390 Studies in Satire. Semester course; 3 lecture hours. 3 credits. Studies in the satiric mode, with some attention to the definition and development of the mode.

ENG 391 Topics in Literature. Semester course; 3 lecture hours. 3 credits. Maximum twelve credits in all topic courses at the upper-level division. Prerequisite: junior standing. An in-depth study of a literary genre, an aesthetic or cultural theme in literature, or of a major writer in English or American literature. See the *Schedule of Classes* for specific topic to be offered each semester.

ENG 400 Shakespeare: The Early Works. Semester course; 3 lecture hours. 3 credits. Study of the plays and poems written before 1600,

focusing primarily on the comedies and histories. For ENG majors, these courses (limit of 6 credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 401 Shakespeare: The Later Works. Semester course; 3 lecture hours. 3 credits. Study of the plays written in 1600 and after, focusing primarily on the mature tragedies and late romances. For ENG majors, these courses (limit of 6 credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 402 Chaucer. Semester course; 3 lecture hours. 3 credits. A study of *The Canterbury Tales*, with some attention to the early works. For ENG majors, these courses (limit of 6 credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 403 Milton. Semester course; 3 lecture hours. 3 credits. A study of shorter poems, selected prose, *Paradise Lost*, and *Samson Agonistes*. For ENG majors, these courses (limit of 6 credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 407 Medieval Epic and Romance. Semester course; 3 lecture hours. 3 credits. A study of the vernacular epic and romance in England and on the continent prior to 1500.

ENG 409 Medieval Studies. Semester course; 3 lecture hours. 3 credits. Studies in the English language and literature of the Middle Ages in its cultural context. May be repeated with different topics for a maximum of six credits.

ENG 410 Renaissance Studies: _____. Semester course; 3 lecture hours. 3 credits. Studies in the English language and literature of the sixteenth and seventeenth centuries. May be repeated with different topics for a maximum of six credits.

ENG 411 Eighteenth-Century British Studies. Semester course; 3 lecture hours. 3 credits. Studies in the literature, language and culture of the Restoration and eighteenth-century England. May be repeated with different topics for a maximum of six credits.

ENG 413 American Novels and Narratives: Nineteenth Century and Earlier. Semester course; 3 lecture hours. 3 credits. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of Americans.

ENG 414 American Novels and Narratives: Twentieth Century. Semester course; 3 lecture hours. 3 credits. A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of Americans.

ENG 415 British Novel: Eighteenth Century. Semester course; 3 lecture hours. 3 credits. A study of the British novel in the eighteenth century, usually including Defoe, Richardson, Fielding, Burney, Sterne, Austen, Radcliffe, and Walpole.

ENG 416 British Novel: Nineteenth Century. Semester course; 3 lecture hours. 3 credits. A study of the British novel, usually including Austen, Dickens, Thackeray, the Brontës, George, Eliot, and Hardy.

ENG 421, 422/CML 421, 422 Comparative Literature. Semester courses; 3 lecture hours. 3, 3 credits. A comparative study of the forms and contents of the literature of Western civilization in translation with some attention to the dominant influence on and interrelationships between English and continental literatures. First semester: Ancient, Medieval, and Renaissance. Second semester: Neoclassical, Romantic, and Modern.

ENG 423 English Drama, 900-1642. Semester course; 3 lecture hours. 3 credits. A study of the origin of the English drama and its development until the closing of the theaters in 1642, exclusive of Shakespeare.

ENG 424 Restoration and Eighteenth-Century Drama. Semester course; 3 lecture hours. 3 credits. A study of English drama from 1660-1777, usually including the comedy of manners, sentimental comedy, ballad opera, farce, and heroic and bourgeois tragedy.

ENG 426/THE 426 Advanced Playwriting. Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisite: Completion of ENG 305 in drama with grade of A or B, or permission of instructor. A study of the craft of playwriting, leading to the creation of scripts for the theatre. Works may be selected for reading and performance.

ENG 429 Form and Theory of Poetry. Semester course; 3 lecture hours. 3 credits. A study of the poetics, including prosody, with attention to the nature and functioning of language in poetry (especially metaphor), the development of poetic genres, and the process by which poems are created and come to have meaning.

ENG 430 Form and Theory of Fiction. Semester course; 3 lecture hours. 3 credits. A study of narration in verbal and other media, with attention to the nature, organization, and functioning of language in narrative, the development of narrative genres, and the process by which narratives are created and come to have meaning.

ENG 433/EDU 433 Literature for Adolescents. Designed to acquaint the prospective secondary school English teacher with the nature, scope, and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

ENG 435 Advanced Poetry Writing. Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisite: Completion of ENG 305 in poetry with an "A" or "B", or permission of instructor. Study the craft of writing poetry, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of work and to become proficient in critical analysis in order to evaluate of their own poetry.

ENG 437 Advanced Fiction Writing. Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisite: Completion of ENG 305 in fiction with an "A" or "B", or permission of instructor. Study of the craft of writing fiction, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate their own work.

ENG 449/LIN 449/ANT 449 Introduction to Linguistics. Semester course; 3 lecture hours. 3 credits. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For ENG majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 450/LIN 450 Modern Grammar. Semester course; 3 lecture hours. 3 credits. Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For ENG majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

ENG 451/LIN 451 History of the English Language. Semester course; 3 lecture hours. 3 credits. The historical development of the English language; etymology, morphology, orthography, and semantics. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

ENG 452/WST 452/LIN 452 Language and Gender. Semester course; 3 lecture hours. 3 credits. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power, and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

ENG 453/LIN 453 Introduction to Modern Rhetoric. Semester course; 3 lecture hours. 3 credits. An introduction to the broad range of modern rhetorical theories, emphasizing their relationships with linguistics, literary criticism, and the process of writing. May not be

used to satisfy the College of Humanities and Sciences requirement in literature.

ENG 454/INT 454/ANT 450 Cross-Cultural Communication. Semester Course; 3 lecture hours. 3 credits. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems.

ENG 491 Topics in Literature. Semester course; 3 lecture hours. 3 credits. Maximum twelve credits in all topics courses at the upper-division level. An in-depth study of a selected literary topic or genre of one or two major writings in English or American literature. See the *Schedule of Classes* for specific topic to be offered each semester.

ENG 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester. Student may take no more than 9 hours total. Generally open only to upper-class students with at least 12 hours of English. To register, the student must write a proposal and have it approved by the supervising instructor, the director of undergraduate studies, and the department chairperson. This course is designed for students who wish to do extensive reading and writing in a subject not duplicated by any English course in the *Bulletin*. It may not be used for a writing project.

ENG 493 English Internship. Semester course; 1-3 credits per semester, maximum total of 6 credits. Open to students with demonstrated writing ability; completion of ENG 302, 304, or 327 is recommended. Students will apply research, writing, and/or editing skills in an approved job in areas such as business, government, law, or financial services. Permission and determination of credit must be established prior to registration.

ENG 552/EDU 552 Teaching English as a Second Language. Semester course; 3 lecture hours. 3 credits. Provides students who plan to teach English to people whose native language is not English with a variety of instructional/learning strategies. Presents and explores current approaches and methodology, as these relate to linguistic features and pedagogy.

Courses in Linguistics

LIN 103/LSK 103 Introduction to Languages. Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological, and historical aspects of languages. (Completion of this course does not qualify a student to enroll in the 200 level of a language without passing a language placement test.)

LIN 401/SPA 401 Comparative Structures. Semester course; 3 lecture hours. 3 credits. Prerequisite: completion of 9 credits of Spanish at the 300 level or the equivalent. Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish.

LIN 449/ENG 449/ANT 449 Introduction to Linguistics. Semester course; 3 lecture hours. 3 credits. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in English. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

LIN 450/ENG 450 Modern Grammar. Semester course; 3 lecture hours. 3 credits. Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

LIN 451/ENG 451 History of the English Language. Semester course; 3 lecture hours. 3 credits. The historical development of the English language; etymology, morphology, orthography, and semantics. May not be used to satisfy the College of Humanities and Sciences

requirement in English. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

LIN 452/WST 452/ENG 452 Language and Gender. Semester course; 3 lecture hours. 3 credits. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power, and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

LIN 453/ENG 453 Introduction to Modern Rhetoric. Semester course; 3 lecture hours. 3 credits. An introduction to the broad range of modern rhetorical theories, emphasizing their relationships and linguistics, literary criticism, and the process of writing. May not be used to satisfy the College of Humanities and Sciences requirement in English.

LIN 552/EDU 552 Teaching English as a Second Language. Semester course; 3 lecture hours. 3 credits. Provides students who plan to teach English to people whose native language is not English with techniques used in teaching foreign languages. Contrastive analysis of morphology, phonology and syntax are used to isolate areas of difficulty in learning English.

Courses in Language Skills

LSK 103/LIN 103 Introduction to Languages. Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological, and historical aspects of languages. (Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test.)

LSK 203 Classical Elements in the English Language. Semester course; 3 lecture hours. 3 credits. Development of English vocabulary through a study of Greek and Latin elements in English: derivatives, roots, and loan words. Some emphasis on the special vocabularies of the sciences.

Minor and Certificate in Environmental Studies (ENS)

Andrew D. Lacatell

Program Coordinator, Center for Environmental Studies (1993) BA 1993 University of Richmond; MS 1995 Virginia Commonwealth University; MPH 1997 Medical College of Virginia, Virginia Commonwealth University

Environmental crises and discussion of environmental issues are central features of modern industrial societies. Continuing technological advancement and economic growth demand increased public understanding of environmental constraints and the effects of human activity on the environment. When environmental questions are explored in depth, scientific knowledge, policy considerations, and ethical questions are necessarily joined. The curriculum in environmental studies is structured to provide a multidisciplinary introduction to biophysical and social factors which affect the quality of life on earth.

Minor in Environmental Studies

The minor in environmental studies provides an overview of the field which offers an intrinsically interesting way for many students to organize elective course work while gaining knowledge important to life in the

contemporary world. This program is structured to provide a multidisciplinary introduction to biophysical and social factors that affect the quality of life, through the study of the scientific knowledge, policy considerations and the ethical issues that constitute environmental issues. When combined with the appropriate major, an environmental studies minor can be useful to students planning careers in any area concerned with environmental processes and problems. The minor may also prepare students for study at the graduate level in such concentrations as ecology and environmental systems.

The minor in environmental studies consists of 24 credits. Required courses are listed. Electives to complete the minor may be selected from ENS-listed courses and from courses in related departments. Consult the ENS program coordinator or adviser for course approvals. At least one course must be taken from the Natural Sciences and one course from the Social Sciences. Of the 24 credits, 18 must be outside the student's major department. Twelve (12) credits must be at the 300 level or higher.

Required Courses for Minor

	<i>Credits</i>
USP/ENS 331 Environmental Systems	3
ENS/POS 311 Politics of the Environment	3
ECO 325 Environmental Economics	3
ENS 490 Research Seminar in Environmental Studies	3
STA 210 Basic Practice of Statistics	
OR BUS 301 Business Statistics	3

15

Post-Baccalaureate Certificate in Environmental Studies

The environmental studies certificate is for students who already hold a bachelor's degree in another field and wish to pursue studies in the environmental field. The certificate can help prepare students for work in such fields as industrial pollution control, municipal water treatment, environmental planning and analysis, biological monitoring, and science writing and reporting.

The Post-Baccalaureate Certificate in Environmental Studies requires 36 credits, which includes four environmental courses and two statistics courses. Electives to complete the certificate may be selected from the ENS-listed courses and from courses in related departments. Consult the ENS program coordinator or adviser for course approvals. At least one course must be taken from the Natural Sciences, and one from the Social Sciences. Of the 36 credits, 24 credits must be at the 300 level or above. A maximum of 11 of the environmental studies-related credits and all 6 of the statistics credits may be transferred from course work completed before or after receiving the bachelor's degree. At least 18 approved credits must be taken at Virginia Commonwealth University.

Post-baccalaureate certificate students must apply for admission using an undergraduate admission form. **Normally, a GPA of 2.7 or better is required for admission.** Please contact the Center for Environmental Studies for the most current curriculum guidelines.

Required Courses for Certificate	<i>Credits</i>
USP/ENS 331 Environmental Systems OR USP/ENS/GEO 332 Environmental Management	3
ENS/POS 311 Politics of the Environment	3
ECO 325 Environmental Economics	3
ENS 490 Research Seminar in Environmental Studies	3
STA 210 Basic Practice of Statistics OR BUS 301 Business Statistics	3
Three additional credits in statistics above STA 210 (Students may not receive credit for both STA 210 and BUS 301.)	3
	18

Additional Recommended Courses

BIO 151-152, L151-L152 Introduction to Biological Sciences and
Laboratory
CHE 101-102, L101-L02 General Chemistry and Laboratory

Environmental Concentration in Bachelor of Science in Science

An environmental science concentration is available in the Bachelor of Science in Science program. Contact the Center for Environmental Studies for more information.

Courses in Environmental Studies

ENS 103/BIO 103 Environmental Science. Semester course; 3 lecture and 1 recitation hour. 4 credits. Basic scientific principles of environmental processes. Draws together aspects of biology, chemistry, geology, physics, and sociology. Among the topics covered are ecology, natural resources, air and water resources, energy and recycling, population biology and sustainable global societies. Not applicable for credit towards the BS in Biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

ENS L103/BIO L103 Environmental Science Laboratory. Semester course; 2 hours. 1 credit. Pre or corequisite: ENS/BIO 103. Laboratory exercises correlated with ENS/BIO 103. Intended for CRJ, ENG, HIS, MAC, PHI, RST, POS, PSY, SOC, ANT, URS, foreign language majors, and programs in other schools requiring science courses. Not intended for CRJ, ENG, HIS, MAC, PHI, RST, POS, PSY, SOC, ANT, URS, foreign language majors, and programs in other schools requiring science courses. Not intended for other Humanities and Sciences majors.)

ENS 311/POS 311 Politics of the Environment. Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crises it centers on. Special attention will be given to the constitutional, political, and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes.

ENS 314/BIO 315 Man and Environment. 3 lecture hours. 3 credits. A comparative study of the ecology and natural history of human populations, including the environment as determining factors in the evolution of human institutions and technology, resources management, and population control; basic theory of population crises; cultural traditions as mechanisms of population control; basic theory of population biology. (Not applicable to the biology major.)

ENS 315/PHY 315 Energy and the Environment. Semester course; 3 lecture hours. 3 credits. Open to non-physics majors; not applicable to the physics majors. Prerequisite: junior or senior standing. A study of society's demand for energy, how it is currently being met, the environmental consequences thereof, and some discussion of alternatives.

ENS 330/BIO 332 Environmental Pollution. Semester course; 3 lecture hours. 3 credits. Prerequisite: eight credits in biology. The study of pollution in the environment with emphasis on the procedures for detection and abatement. (Not applicable to the biology major.)

ENS 331/USP 331 Environmental Systems. Semester course; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework for taking into account the many interactions among environmental systems and between these systems and man.

ENS 332/USP 332/GEO 332 Environmental Management. Semester course; 3 lecture hours. 3 credits. Provides a framework for the development of environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

ENS 335/GEO 335 Environmental Geology. Semester course; 3 lecture hours. 3 credits. Corequisite: ENS/GEO L335. The relationship between humankind and the physical environment, Earth materials and processes, geological hazards, water, mineral and energy resources, land use, and environmental health and law.

ENS L335/GEO L335 Environmental Geology Laboratory. Semester course; 2 laboratory hours. 1 credit. Corequisite: ENS/GEO 335. Required for ENS majors enrolled in ENS/GEO 335; optional for other majors. Laboratory exercises coordinated with ENS/GEO 335 lectures. Attendance on one Saturday morning field trip required.

ENS 401/GEO 401 Meteorology and Climatology. Semester course; 3 lecture hours. Prerequisite: GEO 203 or a physical science sequence or permission of instructor. A basic, semiquantitative course in the elements of weather and climate, their driving forces, and their spatial and temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather, and climate.

ENS L401/GEO L401 Meteorology and Climatology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: EAS/ENS 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

ENS 411/GEO 411 Oceanography. Semester course; 3 lecture hours. 3 credits. Prerequisite: GEO 203 or PHY 101 or a natural science sequence or permission of instructor. A basic course in the physical, chemical, and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments, and ecology. Designed for earth science teachers.

ENS 490 Research Seminar in Environmental Studies. Semester course; 3 lecture hours. 3 credits. Prerequisite: senior standing and at least 12 hours of approved environmental studies course work. An interdisciplinary examination of problems and issues central to environmental studies. Environmental research of VCU faculty will be reviewed, and selected local environmental problems will be studied. Each student will complete a research project focusing on a specific environmental question.

ENS 491 Topics in Environmental Studies. Semester course; variable; 1-3 credits per semester. May be repeated with different topics for a maximum of six credits. Prerequisites vary by topic. An in-depth study of a selected environmental topic. see the *Schedule of Classes* for specific topic(s) and prerequisites.

ENS 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all topics courses. Open generally to juniors or seniors who have declared environmental studies as a minor. Determination of the amount of credit and permission of instructor must be procured prior to registration for the course.

ENS 493 Environmental Studies Internship. Semester course; variable; 1-3 credits per semester. Maximum total of six credits. Open to students of senior standing who have had some background in environmental studies. Students receive credit for work on environmental projects with approved agencies. Participation requires the approval of both a faculty member and an agency. Graded Pass/Fail.

Department of Foreign Languages

Margaret T. Peischl

Associate Professor and Department Chair (1981) BA 1955 Pennsylvania State University; MA 1974 and PhD 1981 University of Southern California

- Béjar, Manuel (1980) *Associate Professor* BA 1965 University of Madrid; MA 1967 and PhD 1970 University of Utah
- Brown, R.McKenna (1995) *Associate Professor* BA 1977 Florida A & M University; MA 1985 and PhD 1991 Tulane University
- Dvorak, Paul F. (1974) *Associate Professor* BA 1968 La Salle College; MA 1970 and PhD 1973 University of Maryland
- Godwin-Jones, Robert A. (1979) *Professor and Director, Instructional Development Center; Information Resources and Media* BA 1971 Franklin and Marshall College; MA 1973 and PhD 1977 University of Illinois, Urbana-Champaign
- Kirkpatrick, Peter S. (1992) *Associate Professor* BA 1986 University of Richmond; MA 1988 and PhD 1992 University of Virginia
- Maréchal, Chantal Anne-Marie (1991) *Associate Professor* Licence es Lettres 1969 Matrise es Lettres, Sorbonne, Paris; MA 1977 State University of New York; PhD 1983 University of Michigan
- Masullo, Antonio (1978) *Assistant Professor* JD 1954 University of Naples
- Moore, Sonja O. (1994) *Instructor and Director, Language Learning Center* BA 1980 University of Leeds, England; MA 1984 Pennsylvania State University
- Muñoz, Eugenia (1990) *Associate Professor* BA 1966 Universidad de Valle; MA 1981 Syracuse University; PhD 1990 University of Virginia
- Murphy-Judy, Kathryn A. (1994) *Assistant Professor* BA 1972 and MA 1975 Colorado State University; PhD 1986 University of Minnesota
- Mustafa, Nancy C. (1986) *Lecturer* AA 1959, AB 1961 and MA 1964 George Washington University
- Navarro, Consuelo (1997) *Assistant Professor* BA 1983 Central University of Ecuador; MA 1989 University of Tennessee; PhD 1997 University of Minnesota
- Overvold, Angelina E. (1991) *Assistant Professor* BA 1971 St. Olaf College; MA 1975 University of Michigan; PhD 1996 Brown University
- Sims, Robert L. (1976) *Professor* BA 1966 University of Michigan; MA 1968 and PhD 1973 University of Wisconsin
- Sites, Linda Q. (1988) *Lecturer* BA 1986 Mary Baldwin College; MA 1988 University of Virginia
- Stackhouse, Kenneth A. (1971) *Associate Professor* BA 1966 Drew University; MA 1968 and PhD 1972 University of Florida
- White, Ann S. (1997) *Assistant Professor* BA 1983 Williamette University; MA 1986 and PhD 1988 University of Pittsburgh

Emeriti Faculty

Beck, William J. *Professor Emeritus* BS Rutgers University; MA Middlebury Language School; PhD Institut Catholique, Paris, France

Along with a broad-based liberal education in the humanities, the Bachelor of Arts in Foreign Languages prepares students for careers requiring a knowledge of a foreign language, and the various sociocultural environments of its speakers; for graduate study in diverse fields; and for teaching French, German, or Spanish.

The department offers the Bachelor of Arts in Foreign Languages, with tracks in French, Spanish, German, and comparative literature.

The Department of Foreign Languages also offers courses in foreign literature in English translation and European culture. These courses do not satisfy General Education language requirements or foreign language major requirements.

All VCU students wishing to continue their high school language must take the Foreign Language Placement Test. While credit is not granted by the test, appropriate levels of placement may fulfill certain graduation requirements. Transfer students will receive the credits granted by the institution from which they trans-

fer. Consult specific language requirements for the bachelor of arts or bachelor of science degrees.

Foreign language majors interested in teaching early, middle, secondary, or special education can enroll in an Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in one of the foreign languages mentioned above and a master's in teaching. For additional information about this program administered jointly by the College of Humanities and Sciences and the School of Education, contact the School of Education's Office of Academic Services.

Language majors are strongly encouraged to take two more years in a second foreign language. The department offers minors in French, German, and Spanish, and courses in Chinese, Italian, Latin, Portuguese, Swahili, Hindi, and Russian. The Department of Foreign Languages also offers courses in the Latin American Studies minor and the Russian Area Studies minor.

Study Abroad Opportunities

Majors or minors in the Department of Foreign Languages are encouraged to participate in a study-abroad program. Programs for students interested in living and studying abroad during the summer offer students opportunities for short-term immersion in the language, culture, and civilization of the countries they visit. Currently, study-abroad programs through VCU are available to France, Guatemala, Canada, Austria, Spain, Germany, and Italy. VCU is a member of the International Student Exchange Program (ISEP) which offers a junior year abroad at one of 40 universities worldwide.

Minimum Major and Minor Requirements for Transfer Students

Transfer students planning to major in a foreign language must complete a minimum of two 400-level courses within the department. Credit and distribution requirements must be satisfied by all students.

For the minor, course work must include at least two courses at the 300 level or above in the chosen language area.

Degree Requirements

Bachelor of Arts in Foreign Languages with a Track in French, German, or Spanish. The degree program requires a minimum of 120 credits, with at least 30 of those credits in upper-level courses in French or German, and 31 credits in Spanish. Along with the general requirements for the BA degree, foreign language students in French, German, or Spanish must take the 295 Gateway course (exemptions from the 295 course are made on a case by case basis) and these courses from the corresponding track:

300 and 301	Grammar and Writing I (Previously listed as Survey of Literature)
305	Conversation (or 311 in German)
320 and 321	Civilization (Previously listed as Literature of Spanish America in Spanish)
330 and 331	Survey of Literature
495	Portfolio Seminar (1 credit; Spanish only)

To complete the major, students select nine hours of course work at the 400 level.

Transfer students who intend to major in a foreign language must take a minimum of two 400-level courses at VCU in the chosen language area. Both credit and distribution requirements for the major must be satisfied.

Foreign language minors must take at least two 300- or 400-level courses at VCU in the chosen language area.

Bachelor of Arts in Foreign Language with a Track in Comparative Literature. The foreign languages degree program with a track in comparative literature requires a minimum of 120 credits, with at least 30 of those credits toward the major in upper-level (300-400) courses.

Along with the general education requirements of the College of Humanities and Sciences for the BA degree and the Academic Campus requirements, students in the comparative literature track must take CML 301 Introduction to comparative literature and CML 485 Seminar in comparative literature – core courses for the track. Students may substitute ENG 350 Approaches to Literature for CML 301 with the permission of the comparative literature adviser.

Students in this program must also take at least 12 upper-level credits in one of the following national literatures: French, German, Spanish/Latin American. These must include the appropriate 330-331 Survey of Literature sequence, and two other literature courses in the original language.

Students must also take at least six upper-level courses in a second national literature – American, Chinese, English, French, German, Greek, or Spanish. Courses to satisfy this requirement can be taken in the original language or in English translation (FLT).

Finally, the student in this track of the program must take at least six upper-level courses in comparative literature, to include more than one national literature. The following courses may be used to fulfill this requirement:

Comparative Literature (CML)

CML/FLT 391 Topics in Foreign Literature in English Translation

English (ENG)

ENG 315 The Modern Novel
 ENG 363 African Literature
 ENG 365 Caribbean Literature
 ENG 367 Eastern Thought in Western Literature
 ENG 386 Introduction to Folklore
 ENG 391 Topics in Literature
 ENG 407 Medieval Epic and Romance
 ENG/CML 421,422 Comparative Literature

Theatre (THE)

THE 403,404 History of Dramatic Literature
 THE423,424 Modern Drama

The following courses may be used to fulfill the requirements only with the permission of the comparative literature adviser:

English (ENG)

ENG 316 Modern Poetry
 ENG 317 Modern Drama
 ENG 318 Contemporary Poetry
 ENG 361 The Bible as Literature
 ENG 381 Fiction into Film
 ENG 390 Studies in Satire

ENG 391 Topics in Literature
 ENG 407 Medieval Studies
 ENG 491 Topics in Literature
 ENG 492 Independent Study

Foreign Literature in English Translation (FLT)

FLT 311 The Humanist Quest in French Literature
 FLT 312 Revolt and Renewal in Modern French Literature
 FLT 391 Topics in Foreign Literature in English Translation
 FLT 492 Independent Study

Minor in French, German, or Spanish

A minor in French, German, or Spanish requires at least 18 credits in the chosen language, only six of which may be earned at the 200 level. Of these, the 3-credit 295 Gateway course or its equivalent must be successfully completed before the student may advance to the upper-level courses in the minor. Exemptions from the 295 course are made on a case-by-case basis.

Courses in European Cultures

EUC 307 Aspects of German Culture. Semester course; 3 lecture hours. 3 credits. A broad interdisciplinary approach to an understanding of German culture, language, and literature. Lectures in English by guest speakers and/or use of films as required. (This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.)

EUC 311 Classical Mythology. Semester course; 3 lecture hours. 3 credits. The basic myths of the Greek and Roman heritage. Their impact in culture then and now; from the origins of Greek myth to the superstitions of the late Roman and early Christian world.

EUC 345/INT 345/USP 350 Culture and Urbanism in Great Cities of the World. Semester course; 3 lecture hours. 3 credits. Prerequisite: sophomore standing or permission of instructor. Course may be repeated under different topics for a total of six credits. An interdisciplinary course with a dual focus on the origin, expansion, and significance of an important European city and on reflections of urbanism in its culture. Particular emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural dimensions of urbanism, especially as the latter are manifested in major works of literature.

Courses in Foreign Languages

FLA 101-102 Foreign Languages: _____. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

FLA 201 Foreign Languages: _____. Semester course; 3 lecture hours. 3 credits. Prerequisite: FLA 102 or equivalent. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills. Course may be repeated with different languages.

FLA 202 Foreign Languages: _____. Semester course; 3 lecture hours. 3 credits. Prerequisite: FLA 201 or equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts. Course may be repeated with different languages.

FLA 490 Foreign Languages Internship. Semester course; 50 to 150 clock hours in local, national, or international internship placement where the use of a foreign language is required. 1-3 credits. Prerequisites: prior completion of nine credits in a foreign language at the 300 level, with a course in advanced grammar and composition, one in conversation and one in civilization. Students studying languages in which the 300-level courses are not available will be handled on a case by case basis in the screening process. All students will be screened before acceptance. Under the supervision of both a faculty member and

a field supervisor, students will apply their linguistic skills in an approved work situation and each internship will be specifically designed in accordance with the student's linguistic level and the job requirements.

Courses in Foreign Literature in English Translation

FLT 311 The Humanist Quest in French Literature. Semester course; 3 lecture hours. 3 credits. A study of the developing concept of humanism in French literature from the Middle Ages to the end of the eighteenth century. (This course will not satisfy foreign language requirements. No knowledge of French is required. All work is done in English.)

FLT 312 Revolt and Renewal in Modern French Literature. Semester course; 3 lecture hours. 3 credits. A study of the twin themes of revolt and renewal in French literature of the nineteenth and twentieth centuries. (This course will not satisfy foreign language requirements. No knowledge of French is required. All work is done in English.)

FLT 321 Early German Literature. Semester course; 3 lecture hours. 3 credits. Changing perspectives in German literature from its pagan beginnings, through the Medieval Golden Age, Baroque extremism, the Enlightenment, and Storm and Stress up to Classicism and Goethe's Faust. Treatment of *The Nibelungenlied*, the courtly epic, *Simplicissimus*, and selections by Lessing, Schiller, and Goethe. (This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.)

FLT 322 Modern German Literature. Semester course; 3 lecture hours. 3 credits. Growing psychological awareness and alienation of the individual in German literature of the nineteenth and twentieth centuries. Representative works chosen from among writers of the past century and such modern writers as Thomas Mann, Kafka, Hesse, Brecht, Kafka, Hesse, Brecht, Boll, and Grass. (This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.)

FLT 391 Topics in Foreign Literature in English Translation. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of twelve credits. An in-depth study of selected topics in foreign literature. (This course will not satisfy foreign language requirements. No knowledge of a foreign language is required. All work is done in English.)

FLT 492 Independent Study. Semester course; 1, 2, or 3 credits. Maximum 3 credits per semester, maximum total of all FLT independent study courses 6 credits. Open generally only to students of junior or senior standing who have acquired at least 12 hours in any literature courses. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest and for which they have the necessary background. Determination of course content and permission of the instructor and department chair must be obtained prior to registration for the course.

Courses in Chinese

CHI 101-102 Elementary Chinese. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

CHI 201-202 Intermediate Chinese. Continuous course; 3 lecture hours. 3-3 credits. Rapid review of the essentials of grammar, conversation, and readings from Chinese literature.

Courses in French

FRE 101-102 Elementary French. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

FRE 110 Intensive French I. Semester course; 10 lecture and lab hours. 8 credits. This intensive course combines FRE 101 and 102 into a single semester.

FRE 201 Intermediate French. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

In order to complete French through the intermediate level, a student may select FRE 202 or 205.

FRE 202 Intermediate French Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

FRE 205 Intermediate Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

FRE 210 Intensive French II. Semester course; 6 lecture and lab hours per week. 6 credits. Prerequisite: Successful completion of FRE 101 and 102 or FRE 110. This intensive course combines FRE 201 and 202/205 into a single semester.

Non-foreign language majors who wish to take one or two upper-level classes only need to complete FRE 202 or 205, not 295.

FRE 295 Gateway to the French Major/Minor. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 201 or permission of instructor. This course is composed of three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of texts; 2) improving students' oral communication; 3) listening skills: extensive use of recorded material and Language Learning Center resources to improve and enhance listening skills in a variety of authentic contexts.

FRE 300, 301 Advanced Grammar and Writing. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A systematic review of French grammar with emphasis on the elements of style and vocabulary building; translation and composition.

FRE 305 Advanced Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. Development of advanced oral skills while conversing about topics on current French culture and society. Proficiency in listening comprehension is stressed through regular activities based on a variety of different situations of communication.

FRE 320 French Civilization and Culture I. Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A survey of French civilization and culture from its origins to the French Revolution. Introduction to and analysis of the most important aspects of Gallo-Roman society and of the Merovingian, Carolingian, and Capetian dynasties which influenced the institutions of the Ancien Regime and still serve as cultural archetypes and icons in contemporary French culture.

FRE 321 French Civilization and Culture II. Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A survey of French civilization and culture from the Napoleonic era to the present. This course retraces important cultural and social traditions found during the first Empire, the Restoration, the Second Republic, the Second Empire, the Commune, the Third and Fourth Republics which influenced and continue to shape contemporary French civilization and culture of the Fifth Republic.

FRE 330, 331 Survey of Literature. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. First semester: through the eighteenth century. Second semester: nineteenth and twentieth centuries.

Consult each 400-level course description for specific requirements.

FRE 410 Explication de Textes. Semester course; 3 lecture hours. 3 credits. Prerequisite: Two French courses at the 300 level or permission of instructor. Conducted in French. This course provides an introduction to terms encountered in text analysis: prosody, versification, rhetorical language, narratology and genres. It presents traditional and current schools of literary criticism and applies them to an interdisciplinary selection of texts.

FRE 420 French Regional Culture. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 320 or 321 or permission of instructor. Conducted in French. Focuses on the culture and civilization specific to each of France's 22 regions. Regional history, culture, architecture as well as sociopolitical, linguistic identities, artisanal trades and folklore are presented for each region.

FRE 421 French Contemporary Culture. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 320 or 321 or permission of instructor. Conducted in French. Focuses on the contemporary culture found in French society today. The individuals and events shaping current French social, political, artistic and cultural life are examined. Each theme is illustrated by current audio-visual materials.

FRE 422 French Cinema. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 320 or 321 or permission of instructor. Conducted in French. Tracing French cinema from les Frères Lumière and Georges Méliès through the New Wave to new contemporary directors, this course focuses on the thematic selections and stylistic techniques particular to French cinematographic culture. The class is offered concurrently with the Annual VCU French Film Festival, thereby permitting students to directly communicate with French actors and directors participating in the Festival.

FRE 425 French Media. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 305 or permission of instructor. Conducted in French. Analysis of the French media: written press, radio, and television. Advanced comprehension skills required and stressed through regular exercises pertaining to different journalistic discourses and styles. Proficiency in journalistic writing is developed in class through the creation of an electronic French newspaper on the Internet.

FRE 430 The Middle Ages. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: *Chansons de geste*, *Littérature Courtoise*, *Fabliaux*, and *Poésie lyrique*.

FRE 431 The Sixteenth Century. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of works representative of literary schools, genres, and major works of the period: *Rabelais*, the *Pléiade*, *Montaigne* and the Baroque poets.

FRE 432 The Seventeenth Century. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A Contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Baroque and Classical readings including prose, poetry, and drama of the authors of the reign of Louis XIV; Pascal, La Rochefoucauld, La Bruyère, Corneille, Racine, and Molière.

FRE 433 The Eighteenth Century. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: the "philosophes" including Montesquieu, Voltaire, Diderot, and Rousseau, and readings from Marivaux, Prévost, and Vauvenargues.

FRE 434 The Nineteenth Century. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Romanticism, Realism, Naturalism, and Symbolism.

FRE 435 The Twentieth Century. Semester course; 3 lecture hours. 3 credits. Prerequisite: FRE 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Surrealism, Existentialism, Nouveau Roman, and Theater of the Absurd.

FRE 440 Commercial French. Semester course; 3 lecture hours. 3 credits. Prerequisite: At least one French course at the 300 level. This course introduces students to the cultural, economic, and linguistic dimensions of the Francophone commercial sector. It builds the student's reading, writing, listening, and speaking proficiencies through active engagement with business-related materials and activities.

FRE 491 Topics in French. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of selected topics in French. See the *Schedule of Classes* for specific topic to be offered each semester.

FRE 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in French. Open generally only to students of junior or senior standing who have six credits of upper-level French courses and/or have a demonstrated competency in the language. Determination of course content and permission of the instructor must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

Courses in German

GER 101-102 Elementary German. Continuous courses; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

GER 201 Intermediate German. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

In order to complete German through the intermediate level, a student may elect GER 202 or 205.

GER 202 Intermediate German Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: GER 201 or the equivalent. Designed to increase the student's proficiency in German through the study of selected cultural and literary texts.

GER 205 Intermediate Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: GER 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

Non-foreign language majors who wish to take one or two upper-level classes only need to complete GER 202 or 205, not 295.

GER 295 Gateway to German Major/Minor. Semester course; 3 lecture hours. 3 credits. Prerequisite: GER 201 or permission of instructor. This course focuses on three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of literary and expository texts; 2) phonetics: use and practice of native pronunciation; 3) listening skills: extensive use of recorded materials and Language Learning Center resources for the improvement of listening proficiency in a variety of authentic contexts.

GER 300,301 Advanced Grammar and Writing. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: German through the intermediate level or the equivalent. A systematic review of German grammar with emphasis on the elements of style and vocabulary building.

GER 305 German Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

GER 311 German through the Media. Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. A course designed to develop language proficiency by using material available through the various media: newspapers, magazines, films, slides, and radio broadcasts.

GER 314 Commercial German. Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Designed to develop the student's ability to use German as a means of oral and written communication in the business world. Emphasis on the acquisition of technical tools necessary for business exchanges in specialized fields.

GER 320 German Civilization I. Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. A survey of German and Austrian culture from their origins to the founding of the German Empire in 1871.

GER 321 German Civilization II. Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. German 320 recommended. Conducted in German. A treatment of German and Austrian culture from the founding of the German Empire in 1871 to the present. Particular emphasis on life in modern-day Austria and the Federal Republic of Germany.

GER 330, 331 Survey of Literature. Semester courses; 3 lecture hours. 3,3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. First semester: beginnings of German literature through the literature of the first half of the nineteenth century. Second semester: contemporary German literature.

GER 300, 301 or 320,321 are prerequisites to all of the following courses.

GER 416 The Age of Goethe. Semester course; 3 lecture hours. 3 credits. Conducted in German. A course centering on the major movements during Goethe's lifetime: enlightenment, storm and stress, classicism, and romanticism. Representative literary works and their social, philosophical, and political backgrounds will be studied.

GER 417 Intellectual Life and Culture in Nineteenth-Century Germany. Semester course; 3 lecture hours. 3 credits. Conducted in German. The rich diversity of German intellectual and literary life in the nineteenth century is studied in works representing romanticism, Biedermeier, Junges Deutschland, realism and naturalism.

GER 420 The Turn of the Century. Semester course; 3 lecture hours. 3 credits. Conducted in German. A course dealing with the major intellectual, philosophical, artistic, and cultural trends from the turn of the century through the Weimar period as reflected in the writings of authors such as Kafka, Mann, and Hesse. Includes impressionism, expressionism, and *neue Sachlichkeit*.

GER 421 The Postwar German Scene. Semester course; 3 lecture hours. 3 credits. Conducted in German. A course dealing with the political, social and intellectual developments of the German-speaking countries from the end of World War II to the present as reflected in the literary works of their major authors.

GER 491 Topics in German. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits. Conducted in German. An in-depth study of selected topics in language, literature or culture.

GER 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in German. Prerequisites: GER 300, 301 or 320, 321. Open generally only to students of junior or senior standing who have six credits of upper-level German courses and/or have a demonstrated competency in the language. Determination of course content and permission of the instructor must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

Courses in Italian

ITA 101-102 Elementary Italian. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

ITA 201 Intermediate Italian. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

ITA 202 Intermediate Italian Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: ITA 201 or the equivalent. Designed to increase the student's proficiency in Italian through the study of selected cultural and literary texts.

ITA 205 Intermediate Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: ITA 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

ITA 305 Italian Conversation and Civilization. Semester course; 3 lecture hours. 3 credits. Prerequisite: Italian through the intermediate level or the equivalent. Conducted in Italian. Practice in the spoken language with emphasis on discussion dealing with Italian civilization and culture.

Courses in Latin

LAT 101-102 Elementary Latin. Continuous course; 4 lecture hours. 4-4 credits. First semester: a study of the Latin language with emphasis on the Latin elements found in English. Latin vocabulary. Second semester: introduction to Latin authors and related aspects of Roman civilization.

LAT 201-202 Readings in Latin Literature. Continuous course; 3 lecture hours. 3-3 credits. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers. First semester: prose, with emphasis on Cicero, Pliny the Younger, and Sallust. Second semester: poetry, with selected readings from Catullus, Tibullus, Ovid, and Vergil.

Courses in Portuguese

POR 101, 102 Elementary Portuguese. Continuous courses; 5 lecture/recitation hours. 4, 4 credits. Elementary grammar, reading, and oral skills.

POR 201 Intermediate Portuguese. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

POR 202 Intermediate Portuguese Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: POR 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

Courses in Russian

RUS 101-102 Elementary Russian. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

RUS 201 Intermediate Russian. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

In order to complete Russian through the intermediate level, a student may elect RUS 202 or 205.

RUS 202 Intermediate Russian Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: Russian 201 or the equivalent.

Designed to increase the student's proficiency through the study of selected cultural and literary texts.

RUS 205 Intermediate Russian Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: RUS 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

RUS 301, 302 Survey of Literature. Semester courses; 3 lecture hours. 3 credits. Prerequisite: RUS 201-202 or the equivalent. Conducted in Russian. First semester: nineteenth century; Pushkin, Gogol, Turgenev. Second semester: late nineteenth and twentieth centuries; Dostoyevski, Chekov, and some modern Russian writers.

RUS 491 Topics in Russian. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of selected topics in Russian. See the *Schedule of Classes* for specific topics to be offered each semester.

Courses in Spanish

SPA 101-102 Elementary Spanish. Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drills.

SPA 201 Intermediate Spanish. Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

In order to complete Spanish through the intermediate level, a student may select SPA 202 or 205.

SPA 202 Intermediate Spanish Readings. Semester course; 3 lecture hours. 3 credits. Prerequisite: SPA 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

SPA 205 Intermediate Spanish Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: SPA 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

Non-foreign language majors who wish to take one or two upper-level classes only need to complete SPA 202 or 205, not 295.

SPA 295 Gateway to Spanish Major/Minor. Semester course; 1-3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. This course is composed of three discrete modules of 1 credit each: (1 credit) Portfolio Preparation: orientation to career development in Spanish, reviewing criteria of good writing, program goals and self assessment essay to begin identifying areas of interest and strengths; (1 credit) Language Proficiency: practice and review of specifics and general areas of language proficiency; (1 credit) Computer Skills: emphasis on text processing in Spanish and tutorials for grammar and pronunciation practice.

SPA 300, 301 Advanced Grammar and Writing. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. A systematic review of Spanish grammar with emphasis on the elements of style and vocabulary building, translation and composition.

SPA 305 Spanish Conversation. Semester course; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

SPA 320 Civilization of Spain I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A treatment of salient manifestations of Spanish culture and civilization from its origins to the present.

SPA 321 Latin American Civilization I. Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A treatment of salient mani-

festations of Latin American culture and Civilization from Pre-Columbian times to the present.

SPA 330 Survey of Spanish Literature. Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A survey of Spanish literature up to the present.

SPA 331 Survey of Latin American Literature. Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. An introduction to major authors and trends up to the present.

SPA 400 Spanish Translation. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. Integrates the basic theoretical and practical aspects of translation, focused from a perspective of applied linguistics. The course includes a workshop component and students will practice both written and oral translation of diverse texts.

9 credits of 300-level courses in Spanish (including those specifically required for certain courses) are prerequisites to all the following courses.

SPA 401/LIN 401 Comparative Structures. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish.

SPA 402 Language Issues in the Spanish-Speaking World. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking World. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics.

SPA 403 History of the Spanish Language. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. A study of the evolution of Spanish from Latin through the Middle Ages to the Modern era. Historical phonology, etymology, morphology, orthography, semantics, and syntax of standard Castilian.

SPA 414 Commercial Spanish. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. This course will develop the student's ability to use the Spanish language as a means of oral and written communication in the business world.

SPA 420 Civilization of Spain II. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level, including SPA 320 or 321, or the equivalent (including those specifically required for certain courses). This course explores the cultural diversity and differences of Spain. Topics focus on a particular interdisciplinary theme, such as the formation of cities, ethnicity, and on a particular area of Spain.

SPA 421 Civilization of Latin America II. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level, including SPA 320 or 321, or the equivalent (including those specifically required for certain courses). This course explores the cultural diversity of Latin America, and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity, and on a specific area of Latin America.

SPA 430 Literary Genres. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses).

Conducted in Spanish. An in-depth look at the development and expression of varieties of literature in Spanish.

SPA 431 Literary Periods. Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. An in-depth synchronic look at movements and their context in literature in Spanish.

SPA 485 Spanish Study Abroad. Semester course; variable credit. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Open to Spanish majors, minors and students in other disciplines. This course offers all students the opportunity to improve their oral and written proficiency in Spanish, to enhance their awareness of cultural diversity and to become independent learners of Spanish language and the cultures of its speakers.

SPA 491 Topics in Spanish. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). An in-depth study of selected topics in Spanish. See the *Schedule of Classes* for specific topic to be offered each semester.

SPA 492 Independent Study. Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in Spanish. Open generally only to students of junior or senior standing who have six credits of upper-level Spanish courses and/or have demonstrated a competency in the language. Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Determination of course content and permission of instructor and department chair must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

SPA 495 Spanish Portfolio Seminar. Semester course; 1 lecture hour. 1 credit. Prerequisite: Completion of 15 credits at the 300 and 400 levels or the equivalent. Completion of 9 credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). This course focuses on self-assessment, compiling a portfolio, career preparation and on the life-long application of skills and knowledge acquired in the program.

Geography

A minor in geography is offered by the Department of Urban Studies and Planning.

Department of History

Susan Estabrook Kennedy

Professor and Department Chair (1973) BA 1964 Marymount Manhattan College; MA 1965 and PhD 1971 Columbia University

Bendersky, Joseph W. (1978) *Professor* BA 1969 City College of New York; MA 1970 and PhD 1975 Michigan State University

Briceland, Alan V. (1966) *Associate Professor* AB 1961 College of William & Mary; MA 1963 and PhD 1965 Duke University

Crome, Robert D. (1973) *Associate Professor* BA 1966, MA 1971 and PhD 1973 University of Wisconsin

Engel, Arthur J. (1976) *Associate Professor* BA 1966 Clark University; MA 1971 and PhD 1975 Princeton University

Fuller, Kathryn H. (1994) *Assistant Professor* BA 1982 Agnes Scott College; MA 1989 and PhD 1992 Johns Hopkins University

Greer, Harold E., Jr. (1968) *Associate Professor* AB 1960, MA 1963 and PhD 1965 University of Alabama; ThM New Orleans Baptist Theological Seminary

Herman, John E. (1994) *Assistant Professor* BA 1981 University of Oregon; MA 1988 and PhD 1993 University of Washington

Jones, Norrece T. (1983) *Associate Professor of History and African-American Studies* BA Hampton Institute; PhD 1981 Northwestern University

Messmer, Michael W. (1972) *Associate Professor* BA 1964 University of Notre Dame; MA 1966 and PhD 1972 Yale University

Moitt, Bernard (1995) *Assistant Professor* BA 1975 York University; MA 1977 Johns Hopkins University; PhD 1985 University of Toronto

Mooney, Catherine M. (1992) *Assistant Professor* BA 1974 St. Louis University; MTS 1977 Harvard Divinity School; MPhil 1986, MA 1986 and PhD 1991 Yale University

Moore, James T. (1970) *Professor* BA 1966 University of South Carolina; MA 1968 and PhD 1972 University of Virginia

Munro, George E. (1971) *Professor* BA 1965 Wheaton College; PhD 1973 University of North Carolina

Schwarz, Philip J. (1972) *Professor* BA 1962 Brown University; MA 1965 University of Connecticut; MLS 1965 Rutgers University; PhD 1973 Cornell University

Talbert, Robert M. (1969) *Associate Professor of History and Religious Studies* BA 1959 Wake Forest University; MDiv Southeastern Baptist Theological Seminary; PhD 1970 Hebrew Union College

Toppin, Edgar A. (1994) *Graduate Research Professor* BA 1949 and MA 1950 Howard University; PhD 1955 Northwestern University

Trani, Eugene P. (1990) *Professor and President, Virginia Commonwealth University* BA 1961 University of Notre Dame; MA 1963 and PhD 1966 Indiana University

Tunnell, Ted (1985) *Associate Professor* BA 1964 North Texas State University, Denton; MA 1966 North Texas State University, Denton; PhD 1978 University of California, Berkeley

Urofsky, Melvin I. (1974) *Professor and Director, Doctoral Program in Public Policy and Administration* BA 1961, MA 1962 and PhD 1968 Columbia University; JD 1984 University of Virginia

Emeriti Faculty

Bigelow, Alden G. *Associate Professor Emeritus* BS, MA and PhD University of Virginia

Blake, William E., Jr. *Professor Emeritus* BA University of Cincinnati; MA and BD Cincinnati Bible Seminary; ThM and ThD Union Theological Seminary

The history curriculum exposes students to a multidimensional analysis of the human past. Knowledge gained through such analysis not only has the intrinsic appeal of any disciplined intellectual inquiry, but also constitutes an indispensable basis for active citizenship and for critical thinking about the society in which the student lives.

Historical training at the undergraduate level leads to personal and social awareness within the rich tradition of the liberal arts. It also provides students an ideal preparation for a wide range of careers and further professional study.

The Department of History offers the Bachelor of Arts in History.

History majors interested in teaching early, middle, secondary, or special education can enroll in an Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in history and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Other students in the program can take advantage of a wide range of courses with thematic, topical, national, or chronological emphases to fulfill requirements and electives.

Master of Arts in History. For information about this program, see the *Graduate Bulletin*.

Degree Requirements

Bachelor of Arts in History. The bachelor of arts curriculum in history requires a minimum of 120 credits, with at least 36 of those credits in history. In addition to the University requirements and those of the College, the student majoring in history must complete:

1. 12 credits in 100-level history area survey courses (six credits may be applied to the College of Humanities and Sciences General Education requirements);
2. HIS 300 Introduction to Historical Study with a "C" grade or better prior to enrolling in more than 6 credits of 300- or 400-level history courses;
3. 24 credits in history courses at the 300-400 level;
4. 3 credits from among HIS 461, 462, 483, 485, 486, 490, 493;
5. at least 6 credits from each of three areas:
 - a) Europe;
 - b) United States; and
 - c) Africa, Asia, Latin America.

Collateral Requirements

In addition to the HIS courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

Along with completion of General Education requirements of the College of Humanities and Sciences for the BA degree and Academic Campus requirements, students may choose approved electives from any courses offered by the College of Humanities and Sciences and the Schools of the Arts, Business, Education, and Community and Public Affairs.

Students should consult with their advisers each semester to design a program which meets these requirements and suits their interests and career objectives.

Honors in History

To earn a bachelor of arts degree with honors in history the students must have a minimum cumulative GPA of 3.0 or a 3.0 average for their junior year, with at least a 3.3 GPA in history courses. Students must also have completed an honors paper in history. See the department adviser or chair for information about the paper requirements. An honors in history notation will appear on the transcripts of students who complete these requirements.

Minor in History

The minor in history consists of 18 credits, 12 of which must be at the upper level (300-400). At least three credits must be taken from HIS 300, 461, 462, 483, 485, 486, 490, or 493.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in history. A full description of this program appears in Part XX of this *Bulletin*.

Courses in History

HIS 101, 102 Survey of European History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Europe's place in the world. First semester: to sixteenth century. Second semester: sixteenth century to the present.

HIS 103, 104 Survey of American History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

HIS 105, 106/AAS 105, 106 Survey of African History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present.

HIS 107, 108 Survey of Asian History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of Asian civilizations from prehistory to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Asia's place in the world. Emphasis will be placed on China, Japan, India, and the Southeast Asian states which combine Chinese and Indian influences. First semester: to 1600. Second semester: 1600 to present.

HIS 109, 110 Survey of Latin American History. Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

HIS 191 Topics in History. Semester course; variable; 1-3 credits per semester. Maximum total of six credits. The study of a selected topic or topics in history. See the *Schedule of Classes* for specific topics to be offered each semester.

HIS 300 Introduction to Historical Study. Semester course; 3 lecture hours. 3 credits. This introduction to the historical discipline is required of all history majors. It is designed to enhance basic research, writing and study skills in order to increase student appreciation of, and performance in, the advanced courses within the history major. History majors must complete HIS 300 with at least a "C" grade prior to enrolling in more than 6 credits of 300- or 400-level history courses.

HIS 301, 302/RST 315, 316 The Ancient Near East. Semester courses; 3 lecture hours. 3, 3 credits. A study of the ancient Near Eastern civilizations of Mesopotamia, Egypt, Anatolia, and Syria-Palestine, from the preliterary period to that of the Archaemenid Empire of the Persians. First semester: preliterary period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Second semester: the rise and fall of the great Neo-Assyrian, Neo-Babylonian, Hebrew, and Persian Empires (c. 331 B.C.).

HIS 303 Greek Civilization. Semester course; 3 lecture hours. 3 credits. A study of the unique cultural heritage of Greece and the historical patterns that rose from it, from the Heroic Age to the urban worlds after Alexander, 1400 B.C.-146 B.C.

HIS 304 Roman Civilization. Semester course; 3 lecture hours. 3 credits. A study of Roman history as it derived from Roman cultural institutions, from the Etruscan period through the conflict of the pagan and Christian worlds and advent of the barbarians, 753 B.C.-A.D. 454.

HIS 305 Introduction to Greek Archaeology. Semester course; 3 lecture hours. 3 credits. Selected centers of civilization in prehistoric, classical, and Hellenistic Greece: their rise, destruction, or renewal by urban planning; the history of classical archaeology, its growth, and impact on modern European art. Emphasis is on the living context of mature and complex peoples: Crete, Mycenaean, Classical, and Hellenistic Greece.

HIS 306 The Early Middle Ages. Semester course; 3 lecture hours. 3 credits. A topical, thematic, integrative, and problems approach to the emergence of a distinctive European community during the period frequently alluded to as the "Dark Ages".

HIS 307/RST 308 The High Middle Ages. Semester course; 3 lecture hours. 3 credits. A detailed historical analysis of the Gregorian Revolution, the Crusades, the Twelfth Century Renaissance, the Thomistic World, and the death of medieval civilization.

HIS 308 Europe in Renaissance. Semester course; 3 lecture hours. 3 credits. Examination of the political, economic, social, cultural, and religious dimensions of the Italian and Northern European Renaissances.

HIS 309/RST 309 The Reformation. Semester course; 3 lecture hours. 3 credits. A careful and intensive inquiry into the spiritual and material forces and people involved in the reformation of Christendom in sixteenth-century Europe.

HIS 310 Europe in Absolutism and Enlightenment, 1648-1815. Semester course; 3 lecture hours. 3 credits. Examines the political, social, and economic orders of Old Regime Europe in the context of their increasing contradictions; introduces the cultural and intellectual forces that helped challenge that regime; culminates in the French Revolution and Napoleon.

HIS 311 The Zenith of European Power, 1815-1914. Semester course; 3 lecture hours. 3 credits. A study of the period in which the nations of Europe reached their height of world power between the reconstruction of Europe after the Napoleonic Wars and the eve of World War I. Topics include the rise of nationalism, liberalism, and socialism; the spread of capitalism and industrial society; the beginnings of mass politics; the new imperialism; the diplomatic revolution in the European state system before World War I.

HIS 312 The Age of Total War: Europe, 1914-1945. Semester course; 3 lecture hours. 3 credits. A study of the transformation of European society precipitated by World War I and World War II. Emphasis is placed on the origin, nature, and repercussions of total war; the crisis of democracy and the rise of modern dictatorships; changes in political, economic, and social institutions; and the decline of European power.

HIS 313 Post-War Europe, 1945 to the Present. Semester course; 3 lecture hours. 3 credits. An examination of Europe's social, economic, and political recovery after World War II and of the transformation of Europe from the center toward the periphery of world power.

HIS 315,316 History of France. Semester courses; 3 lecture hours. 3, 3 credits. First semester: history of France from Gallo-Roman times through the French Revolution and the Napoleonic era. Second semester: from 1815 to the present.

HIS 317,318 History of Germany. Semester courses; 3 lecture hours. 3, 3 credits. First semester: the rise of Prussia, decline of the Holy Roman Empire, and the German Confederation up to 1870. Second semester: Bismarck's Empire, the World Wars, Nazism, and post-1945 Germany.

HIS 319,320 History of England. Semester courses; 3 lecture hours. 3, 3 credits. Traces the rise of England to world hegemony and the causes of its decline as a world power. First semester: Tudor Revolution in government, Reformation, English civil wars and Restoration. Second semester: Whig oligarchy, Industrial Revolution, Victorianism, impact of world wars, problems of Empire.

HIS 321,322 History of Russia. Semester courses; 3 lecture hours. 3, 3 credits. Russian history from its origins to the present, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia. First semester: origins to 1861. Second semester: 1861 to the present.

HIS 323 History of Spain and Portugal. Semester course; 3 lecture hours. 3 credits. A survey of the history of the Iberian peninsula from ancient times to the present, with an emphasis on the distinctive culture and attitude toward life that developed south of the Pyrenees.

HIS 324 The Holocaust. Semester course; 3 lecture hours. 3 credits. A multidisciplinary examination of the events leading to and culminating in the Nazi extermination of six million Jews; the historical settings of European Jewry and of German fascism; the role of traditional anti-Semitism; the psychology of aggressor and victim; the Holocaust in art and literature, and the moral implications for today.

HIS 325,326/RST 318,319 History of the Jewish People. Semester courses; 3 lecture hours. 3, 3 credits. A study of the Jewish people from the destruction of the Second Temple in A.D. 70 to the present. First semester: Judea in Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and the impact of the Emancipation. Second semester: the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and World Jewry.

HIS 327/RST 327 History of Christianity. Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the present. Emphasis is placed upon an understanding of leading events, ideas, movements, and persons in their historical settings.

HIS 328 Modern Middle East. Semester course; 3 lecture hours. 3 credits. Analysis of the history, problems, and prospects of the nations and peoples of the Middle East with emphasis on developments since the Balfour Declaration of 1917.

HIS 329, 330 European Social History. Semester courses; 3 lecture hours. 3, 3 credits. Examines the institutions and structures of European society in the context of their changing interrelationships with politics, economics, ideas, and culture throughout European history. First semester: preindustrial Europe; Second semester: the Industrial Age.

HIS 331 Nazi Germany. Semester course; 3 lecture hours. 3 credits. The origin and nature of Hitler's Third Reich. A study of the failure of the Weimar Republic; genesis of the Nazi racial ideology and party structure; the Nazi political, social, and cultural order after the seizure of power; Nazi foreign policy leading to war and genocide; and an analysis of the personality of Hitler.

HIS 332 History in Film. Semester course; 3 lecture hours. 3 credits. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events, and propaganda.

HIS 333/ECO 419 History of Economic Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 210-211. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth, and distribution from the eighteenth through the twentieth centuries will be presented.

HIS 334 Comparative History of Revolutions. Semester course; 3 lecture hours. 3 credits. An historical investigation of the causes, events, results, and interpretation of revolution, focusing upon such subjects as revolutionary change in the ancient and medieval worlds, and the revolutions of the modern age in England, France, Mexico, Russia, China, and Cuba. Emphasis is on historical comparisons and the specific revolutions examined may vary.

HIS 336 Modern European Intellectual History. Semester course; 3 lecture hours. 3 credits. An investigation of the main currents of European thought since 1750 which have shaped the contemporary mind. Emphasis on the interconnections between ideas and society placed in their historical contexts.

HIS 337 The Origins of Modernism, 1880-1930. Semester course; 3 lecture hours. 3 credits. An investigation of the interconnections between social, intellectual, and artistic change in Europe in the crucial period 1880-1930. Focus is placed on such major figures as Nietzsche, Freud, Einstein, Picasso, Duchamp, and Stravinsky in an attempt to locate the origins of contemporary artistic and intellectual experience.

HIS 338 History of Socialism. Semester course; 3 lecture hours. 3 credits. An examination of the roots of socialism in the cultural and reli-

gious tradition of the West, its development during Europe's industrialization, its present status, and the alternative it presents to capitalism.

HIS 339,340/WST 339,340 History of Women in Europe. Semester courses; 3 lecture hours. 3,3 credits. A history of European women from the Greeks to the contemporary world. A major focus of both courses will be primary sources by and about women. First semester: from antiquity to the Enlightenment. Second semester: from the French Revolution to the present.

HIS 341/WST 341 American Women's History. Semester course; 3 lecture hours. 3 credits. Through reading, lecture, and discussion, this course analyzes historical changes in the social, cultural, political, and economic position of women in America over the past three centuries. It includes such topics as the differences and similarities of women's experiences across lines of class, race, and ethnicity, the struggle for suffrage and social reform, shifting gender roles, and changing employment opportunities.

HIS 342 Colonial America, 1585-1763. Semester course; 3 lecture hours. 3 credits. An examination of the development of the 13 original colonies; the establishment and growth of society, politics, and the economy; and modification in the relationship between the provinces and Great Britain.

HIS 343 Two American Revolutions, 1763-1800. Semester course; 3 lecture hours. 3 credits. An examination of the late eighteenth-century revolutions which molded the American political system - the revolution of colonial Englishmen against Great Britain and the revolution of the nationalists against the government established by the American Revolution, which produced and firmly established the United States Constitution.

HIS 344 Ante-bellum America: 1800-1860. Semester course; 3 lecture hours. 3 credits. Federalist era to 1860. A study of the events, forces, and personalities that shaped Ante-bellum America and led to Southern secession and Civil War.

HIS 345 Civil War and Reconstruction. Semester course; 3 lecture hours. 3 credits. A study of the major events, forces, personalities, and significance of the Civil War and Reconstruction eras.

HIS 346 The Emergence of Modern America, 1877-1914. Semester course; 3 lecture hours. 3 credits. An examination of the major political, legal, social, and economic trends in the United States at this time, focusing on the industrialization of the nation and the resulting effects it had on such diverse matters as urbanization, immigration, economic distribution, and cultural affairs, culminating in the Progressive reform movement.

HIS 347, 348 Twentieth-Century U.S. History. Semester courses; 3 lecture hours. 3,3 credits. A study of the political, social, economic, and cultural history of the United States in the twentieth century, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status, and changing relationships within government and society. First semester: to World War II. Second semester: since World War II.

HIS 349, 350 American Military History. Semester courses; 3 lecture hours. 3,3 credits. Analysis of the evolution, status, and conduct of the armed forces of the United States. Emphasis will be placed on the changing nature of American military thought and institutions, their performance in peace and war, and their relationship to civilian authority. First semester: to 1900. Second semester: 1900 to the present.

HIS 351, 352 History of the South. Semester courses; 3 lecture hours. 3, 3 credits. A regional history placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States. First semester: Old South, from colonial period to 1861. Second semester: New South, from 1865 to the present.

HIS 355 History of Virginia. Semester course; 3 lecture hours. 3 credits. The course focuses on the central themes, events, and personalities of the state's history from 1607 to the present.

HIS 357, 358 American Social History. Semester courses; 3 lecture hours. 3, 3 credits. The social life of Americans is examined in all periods of their history, focusing on the changing structure and functions of social institutions and thought. First semester: to 1876. Second semester: 1877 to the present.

HIS 361,362/AAS 361,362 Americans from Africa. Semester courses; 3 lecture hours. 3, 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations, and ideologies of black Americans in the twentieth century. First semester: to 1877. Second semester: since 1877.

HIS 363 History of the American Urban Experience. Semester course; 3 lecture hours. 3 credits. The evolution of colonial towns into industrial metropolises will be examined, placing emphasis on how this change determined contemporary conditions in American cities.

HIS 365, 366 American Intellectual History. Semester courses; 3 lecture hours. 3, 3 credits. The development of American thought and attitudes, with emphasis on trends in social and religious ideas, the rise of educational and cultural institutions, and expressions in literature and the arts. First semester: Colonial period to 1860. Second semester: 1860 to the present.

HIS 369, 370 American Constitutional and Legal Development. Semester courses; 3 lecture hours. 3,3 credits. An analysis of the development of American constitutionalism and of concomitant legal developments, emphasizing judicial review, the relationship between the Constitution and modern industrialized society, and civil rights, as well as the growth of case law and the rise of the legal profession. First semester: to 1877; Second semester since 1877.

HIS 374 History of the American Frontier. Semester course; 3 lecture hours. 3 credits. A survey of the western movement in the United States from the time the first outposts were established to the end of the frontier in the nineteenth century. Particular attention to the influence of the frontier upon the American mind and ideals.

HIS 375,376 American Diplomatic History. Semester courses; 3 lecture hours. 3,3 credits. A study of the role of the United States in international relations. Emphasis is placed on institutional and theoretical development and continuity as well as the role of the individual. First semester: to 1900. Second semester: since 1900.

HIS 378 History of Central America. Semester course; 3 lecture hours. 3 credits. An exploration of the history of the region beginning with pre-Hispanic Indian civilizations and continuing to the present. Topics to be studied include the Spanish conquest, the liberal-conservative struggle, U.S. gunboat diplomacy, the Sandinista Revolution, civil war in El Salvador, militarism in Guatemala, and democracy in Costa Rica.

HIS 379 The History of Modern Japan. Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political, and intellectual changes that occurred in Japan throughout this time period.

HIS 381 The Qing Dynasty: 1644-1912. Semester courses; 3 lecture hours. 3 credits. This course will examine the rise and fall of China's last imperial dynasty. A general overview of China's traditional setting will give way to a historical analysis of the major social, cultural, political, and intellectual changes that occurred throughout the seventeenth, eighteenth, and nineteenth centuries. Students will also study such specific issues as empire building, ethnic identity, nationalism, imperialism, revolution, etc., in preparation for understanding twentieth-century China.

HIS 382 China: The Twentieth Century. Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of China's modern history, from the 1911 Revolution to the present. The first half of the course will examine pre-1949 China with particular emphasis on Nationalist Party-Chinese Communist Party relations, Sino-Soviet relations, and World War II. The second half will be concerned solely with post-1949 China.

HIS 383 Ancient Egypt. Semester course; 3 lecture hours. 3 credits. A general survey of the history and culture of ancient Egypt from the Predynastic period through the age of the New Kingdom. In addition to the historical reconstruction, emphasis is placed on the art, literature, and religion of each of the major periods.

HIS 384 Latin America and World Affairs. Semester course; 3 lecture hours. 3 credits. A survey of the relation of Latin America since the sixteenth century to major world developments which have occurred and in which Latin America was involved.

HIS 385 History of Mexico. Semester course; 3 lecture hours. 3 credits. A study of Mexico and its culture, including early Indian civilizations, Spanish conquest, colonial period, independence, struggle for reform, revolution, and development as a modern state.

HIS 386 History of Brazil. Semester course; 3 lecture hours. 3 credits. A survey of the development of Brazilian culture and institutions from the Portuguese occupation of eastern South America through the Colonial period, independent empire, and the republic to the present time.

HIS 387/AAS 387 History of West Africa. Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to the present, with emphasis on the rise of states and empires, the introduction, spread, and impact of Islam, the Atlantic Slave trade and its effects, colonialism, African resistance and nationalism, and developments since independence.

HIS 388/AAS 388 Africa: Social, Cultural, and Economic History. Semester course; 3 lecture hours. 3 credits. A study of economic, social, and cultural developments in Africa from the beginning of the nineteenth century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs.

HIS 389/AAS 389 History of Southern Africa. Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia, and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa.

HIS 390/AAS 390/WST 390 Africa and the Americas: Slavery, Gender, and Race. Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

HIS 391 Topics in History. Semester course; 1, 2, or 3 lecture hours. Variable credit. May be repeated with different topics for a maximum of nine credits. An in-depth study of a selected topic in history. See the *Schedule of Classes* for specific topics to be offered each semester.

HIS 392/AAS 392 The Caribbean to 1838. Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late fifteenth century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition.

HIS 393/AAS 393 Akhenaten to Cleopatra. Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten, and various aspects of Egyptian daily life.

HIS 394/ANT 394 Historical Archeology. Semester course; 3 lecture hours. 3 credits. Prerequisites: ANT 103 or ANT 105 and one history course. A review of the methods and findings of historical archaeology from the fifteenth century to the present. Special emphasis on the use of written documents and archaeological artifacts to interpret society and culture in the modern world.

HIS 461-462 Archival and Historical Administration. Continuous course; 3 lecture and 3 workshop hours. 3-3 credits. First semester: an examination of the development of archival administration with emphasis on modern techniques and practices of archival and historical administration. Second semester: workshop in which each student will receive on-the-job training in various phases of archival administration.

HIS 483 Museum Methods. Semester course; 3 lecture hours. 3 credits. Practical presentation of techniques of working museums, presented in conjunction with local or regional museums.

HIS 485 Seminar in Historiography. Semester course; 3 lecture hours. 3 credits. May be repeated for maximum of six credits with different topics. Introduction to questions in historiography, meaning, methodology, and interpretation in the teaching and writing of history.

HIS 486 Seminar in Historical Methodology. Semester course; 3 lecture hours. 3 credits. In a seminar setting involving reading, discussion and writing, students will explore the canons, practices, and limitations of one or more historical methodologies. Since the emphasis may shift from semester to semester, interested students should contact the instructor listed in the current *Schedule of Classes*.

HIS 490 Seminar in History. Semester course; 3 lecture hours. 3 credits. Maximum nine credits. Research and analysis of a selected historical topic in a seminar setting. See the *Schedule of Classes* for each semester's offerings.

HIS 492 Independent Study. Semester course; variable; 2-4 credits per semester. Maximum total of six credits. Open generally only to students of junior and senior standing who have acquired 12 credits in the departmental disciplines. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course.

HIS 493 Internship. Semester course; variable; 2-4 credits per semester. Maximum total of six credits. Open generally to students of senior standing. Students receive credit for work on historical projects with approved agencies. Determination of the amount of credit and permission of departmental internship coordinator must be procured prior to registration for the course.

International and Area Studies Program

J. David Kennamer

Associate Professor of Mass Communications and Program Director (1982) BA 1972 and MA 1978 University of Kentucky; PhD 1982 University of Wisconsin

Bill Newmann

IASP Student Adviser

International and Area Studies Programs are designed to increase awareness of and sensitivity of students to the traditions, values, aspirations, and concerns of people in other parts of the world. Through the completion of a minor, students may either examine the complexity of the international environment by focusing on a wide range of issues – cultural, social, economic, and political – that confront the world community, or they may focus on a specific geographic area. Both options seek to expose students to the unique and/or comparative insights offered by a wide variety of cross-cultural disciplines and courses.

Although these programs are coordinated through the College of Humanities and Sciences, they are open to all VCU undergraduate students, and they allow students to earn a minor in one of the program areas while simultaneously completing their requirements for the baccalaureate degree.

The IASP Director coordinates the various components of the program, provides general advice to students, makes referrals for advising depending on the chosen track or area minor, works closely with faculty in appropriate departments who are responsible for a particular track or minor, and provides the final approval to certify that the minor has been completed.

All relevant information about the minors, including approved lists of courses for the various minors and tracks, is available from the IASP Director.

Students may select one of the following options:

1. International studies minor with a geographic area track or a global issues track.

Within the geographic track, students may focus on Africa, Asia, Latin America, the Middle East, Russia and Eastern Europe, or Western Europe.

2. Area studies minor in Russian area studies or Latin American studies

Study Abroad. The Russian area studies minor and the Latin American studies minor urge participation in a "study abroad" program wherever possible. All students who meet eligibility requirements for the federal financial aid program are permitted to use this assistance in approved study-abroad programs. All reasonable costs associated with the study-abroad programs may be incorporated into the determination of eligibility.

International Studies Minor – 21 credits

1. Core Courses (6 credits)

- INT/POS 105 International Relations
- INT 490 Seminar in International Issues

2. A. Geographic Track (15 credits)

Students will select five courses in one of the following geographic areas: Africa, Asia, Latin America, the Middle East, Russia and Eastern Europe, or Western Europe.

An extensive list of approved courses is available from the director or student adviser. In addition, students must complete the study of two years of a foreign language (through 202 or 205) with a language appropriate to the geographic track.

B. Global Issues Track (15 credits)

In consultation with the program director or student adviser, students will select five courses from the following list. Issues range from international relations and economics to studies of the global environment and the Arab-Israeli conflict.

In addition, students must complete the study of one year of a foreign language, and are strongly encouraged to complete a second year of that language.

The following list provides an example of some, but not all, of the courses approved for the global issues track. Approved courses vary by semester. See the student adviser during registration periods for the current semester's approved courses.

- CRJ 463 Comparative Criminal Justice Systems
- BUS 418 International Management
- BUS 378 International Marketing
- ECO 329 International Economics (Prerequisite ECO 210-211)
- GEO 322 World Political Geography

- HIS 334 Comparative History of Revolutions
- HIS 337 The Origins of Modernism, 1880-1930
- POS/AAS/WST 318 Politics of Race, Class, and Gender
- POS/INT 358 Comparative Politics
- POS/INT 361 Issues in World Politics
- POS/INT 362 International Organizations and Institutions
- POS 363 U.S. Foreign Policy
- POS/INT 364 Vietnam
- POS/INT 365 International Political Economy
- POS 391/491 Topics in Political Science (as appropriate)
- POS/INT 452 Seminar in the Politics of Developing Areas
- POS/INT 468 Seminar on Comparative Foreign Policy

Relevant topics courses taught by other departments may be included with the Director's approval.

Russian Area Studies Minor – 18 credits

The Russian area studies minor requires the completion of 18 credits drawn from a list of approved courses, with at least 12 credits taken at the 300-400 level. At least three credits must be taken in the humanities and three credits in the social sciences. Students are required to complete Russian language courses through the intermediate level (201-202 or 205) and Laboratory. Native Russian speakers cannot use language courses at the 200 level as part of the 18 credits for the Russian area studies minor.

Students are strongly recommended to take Russian 301-302. Students also are urged to complete a study abroad experience of at least one month in Russia.

Below are examples of courses that have been approved for this minor. Approved courses vary by semester. See the student adviser during the registration periods for the current semester's approved courses.

- FLT 391 Topics in Foreign Literature in English Translation (HUM)
- HIS 321, 322 History of Russia (HUM)
- POS/INT 354 Politics of the Former Soviet Union (SSC)
- RUS 201 Intermediate Russian (LANG)
- RUS 202 Intermediate Russian Readings (LANG)
- RUS 205 Intermediate Russian Conversation (LANG)
- RUS 301-302 Survey of Literature (HUM)
- RUS 491 Topics in Russian (HUM)
- SOC 328 Russian Society in Transition (SSC)

Note: Topics courses in various departments and programs (most often designated 391 or 491) may be used toward the minor with the approval of the Russian area studies coordinator when the topic concerns Russia.

Latin American Studies Minor – 18 credits

The Latin American studies minor requires completion of 18 credits drawn from a list of approved courses, with at least 12 credits taken at the 300-400 level. No more than nine credit hours can be taken in any one discipline, and a minimum of three must be taken in each of three areas: 1) art and literature; 2) history and civilization; and 3) the social sciences. Students are required to complete Spanish or Portuguese through the intermediate level (201 and 202), and these two courses may be used as part of the 18 credits of the minor. Spanish majors and native Spanish speakers cannot use Spanish 201 and 202 and native Portuguese speakers cannot use Portuguese 201 and 202 as part of the 18 credits for the Latin American studies minor.

Students are strongly recommended to complete third year Spanish (300, 301 and 330 or 331). Students also are urged to complete a study abroad experience of at least one month in Latin America.

Below are examples of courses that have been approved for this minor. Approved courses vary by semester. See the student adviser during the registration periods for the current semester's approved courses.

Art and Literature

ARH 335 Pre-Columbian Art and Architecture
 ARH 338 Colonial Art and Architecture of Latin America
 ARH 427 Renaissance Art and Architecture of Mexico of Colonial Latin America, 1500-1650*
 ARH 428 Baroque and Neoclassic Art and Architecture of Colonial Latin America*
 ARH 450 Art and Architecture of Mesoamerica*
 ARH 451 Art and Architecture of Andean America*
 ARH 452 Studies in Pre-Columbian Art and Architecture*
 CRA 369 Ancient Peruvian Textile Techniques
 SPA 321 Latin American Civilization I†
 SPA 331 Survey of Latin American Literature†
 SPA 421 Civilization of Latin America II^Δ
 SPA 430 Literary Genres^Δ

* The prerequisite for these courses is three credits in Art History or permission of instructor.

† The prerequisite for these courses is Spanish through the intermediate level or the equivalent.

^Δ Nine SPA credits at 300 level.

NOTE: The following topic courses may be used toward the minor with the approval of the adviser when the topic course concerns Latin America: ARH 474, CML 391, FLT 391 and SPA 491.

History and Civilization

HIS 378 History of Central America
 HIS 384 Latin America and World Affairs
 HIS 385 History of Mexico
 HIS 386 History of Brazil
 SPA 321 Latin American Civilization I*

* The prerequisite for this course is Spanish through the intermediate level or the equivalent.

NOTE: History 391 may be used toward the minor with the approval of the adviser when the topic concerns Latin America.

Social Sciences

ECO 315 Economic Development*
 POS 353 Latin American Governments and Politics
 POS 452 Seminar in the Politics of Developing Areas

* The prerequisite is ECO 210-211 and junior standing.

NOTE: The following topics courses may be used toward the minor with the approval of the adviser when the topic concerns Latin America: ANT 350, ANT 391, ECO 310, ECO 491, GEO 334, GEO 391, POS 391, POS 491, SOC 491 and WST 391.

Courses in International Studies

INT 105/POS 105 International Relations. Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior, and other selected issues as appropriate.

INT 330/SOC 330 Global Societies: Trends and Issues. Semester course; 3 lecture hours. 3 credits. Prerequisites: INT/POS 105 or POS

201 or SOC 101. An analysis of factors that are promoting the globalization of social, economic, and political relations, and an inquiry into implications of these developments for individuals, localities, nations, and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations.

INT 340/GEO 340/USP 340 World Cities Outside of North America. Semester course; 3 lecture hours. 3 credits. An examination of urban habitats in a variety of geographical regions with emphasis on their differences and their common experiences.

INT 345/EUC 345/USP 350 Culture and Urbanism in Great Cities of the World. Semester course; 3 lecture hours. 3 credits. Prerequisite: Sophomore standing or permission of instructor; course may be repeated under different topics for a total of six credits. An interdisciplinary course with a dual focus on the origin, expansion, and significance of a city and the specifics of its urban culture. Particular emphasis will be placed on relating the physical, social, and economic aspects of the city's growth and development to the cultural expression of urbanism.

INT 348/ANT 348 South American Ethnography. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. General ethnographic survey of both highland and lowland indigenous cultures of South America and pertinent cultural changes due to European contact.

INT 349/ANT 349 Contemporary Cultures of Latin America. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. This course surveys contemporary cultures of Latin America. It addresses sociocultural developments from an anthropological perspective and introduces some concepts from development anthropology and applied anthropology.

INT 350/ANT 350 Peoples and Cultures of the World. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. May be taken for a maximum of six credits in two different world areas. A survey of the culture and traditions within a specific geographic area such as Latin America, Oceania, or Southeast Asia. See the *Schedule of Classes* for areas being offered in a particular semester.

INT 351/POS 351 Governments and Politics of the Middle East. Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects in the Middle Eastern states. The courses will explore the primary bases of cleavage and conflict and the political forces that shape the policies and political dynamics of the region.

INT 352/POS 352 European Governments and Politics. Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries.

INT 353/POS 353 Latin American Governments and Politics. Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism, and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges.

INT 354/POS 354 Politics of the Former Soviet Union. Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes, and disintegration of the Soviet political system, and of the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to democratic political system and a market economy. Other topics include nationality issues, social problems, and foreign policy.

INT 355/POS 355 Asian Government and Politics. Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China, and India.

INT 356/POS 356/AAS 356 African Government and Politics of Africa. Semester course; 3 lecture hours. 3 credits. This course will

introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization strategies. Using the comparative approach, the course will primarily focus on West, East, and Central Africa.

INT 357/POS 357/AAS 357 Politics of Southern Africa. Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

INT 358/POS 358 Comparative Politics. Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development.

INT 361/POS 361 Issues in World Politics. Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collectiveness, global environmental politics, as well as selected others. Topics will vary with current events and trends in the international arena.

INT 362/POS 362 International Organizations and Institutions. Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community, the Organization of American States.

INT 363/POS 363 U.S. Foreign Policy. Semester course; 3 lecture hours. 3 credits. A analytical survey of processes and practices in the formulation of United States foreign policy, including an introduction to the goals, problems of implementation, and current challenges faced by policy makers.

INT 364/POS 364 Vietnam. Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of United States involvement. The course will examine closely how and why the U.S. became involved in Vietnam and what impact the Vietnam War has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course will also consider additional topics including: public opinion and the war, the relationship between President and Congress in light of the War, and contemporary U.S. politics as a backlash against the political movements of the 1960s.

INT 365/POS 365 International Political Economy. Semester course; 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory, and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances, and others.

INT 398 Directed Study Abroad. Semester course; variable; 0-8 credits per semester. May be repeated for a maximum of eight credits with approval of student's major department. A course involving travel and/or residence in a foreign country as features of the student's work on a pre-arranged project. Intended primarily for students participating in student exchange programs. Permission of academic adviser required.

INT 452/POS 452 Seminar in the Politics of Developing Areas. Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution, and civil war.

INT 454/ENG 454/ANT 450 Cross-Cultural Communication. Semester course. 3 lecture hours; 3 credits. A study of the dynamics of cross-cultural communication which applies linguistic tools to understanding cultural issues and solving communication problems.

INT 468/POS 468 Seminar on Comparative Foreign Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: POS 201 or permission of instructor. A study of theories, models, and hypotheses of foreign policy behavior in various types of political systems with emphasis on empirical research and analysis of differences and similarities.

INT 490 Seminar in International Issues. Semester course; 3 lecture hours. 3 credits. Prerequisite: INT 340 or permission of instructor. May be taken only once. An individualized research project focusing on international issues and undertaken in a seminar setting.

INT 491 Topics in International Studies. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of a particular topic in international studies. See the *Schedule of Classes* for specific topics to be offered each semester.

INT 492 Independent Study. Semester course; variable credit, 1-3 credits with a maximum total in all independent study courses is 4 credits. Open generally to students of junior and senior standing who have acquired at least 12 credits in international studies courses. Determination of amount of credit and permission of instructor and director must be obtained before registration for the course.

INT 493 International Studies Internship. Semester course; 150 clock hours in a local, national, or international internship placement, 3 credits; or 300 clock hours. 6 credits. Maximum of six credits per student. Prerequisite: Junior or senior standing. Approval of selection committee or program director required. The internship is designed to present opportunities for qualified students to acquire exposure to internationally-oriented public and private organizations and agencies. The course includes a rigorous evaluation of the internship experience, based on learning objectives stipulated in a contract between the student, faculty adviser, and a field supervisor.

Minor in Judaic Studies

See the Department of Philosophy and Religious Studies.

Department of Mathematical Sciences

J. Richard Morris

Associate Professor and Department Chair (1969) BS 1957 and MS 1960 Virginia Polytechnic Institute and State University; MA 1965 and PhD 1969 University of Alabama

David F. Bauer

Professor and Assistant Chair (1974) BSEd 1963 East Stroudsburg State College; MS 1965 Ohio University; PhD 1970 University of Connecticut

James E. Ames, IV

Associate Professor and Assistant Chair (1985) BS 1973 Hampden-Sydney College; MA 1975 and PhD 1977 Duke University

James A. Wood

Professor and Director of Graduate Affairs (1969) BS 1961 Georgetown University; MA 1963 and PhD 1966 University of Virginia

Division of Applied Mathematics and Mathematics

Abay-Asmerom, Ghidewon (1991) *Associate Professor* BS 1986 Andrews University; MA 1987 and PhD 1990 Western Michigan University

Berglund, John F. (1972) *Professor and Director, University Honors Program* BA Ohio Wesleyan University; PhD 1967 Tulane University
Clark, Gordon Wayne (1996) *Assistant Professor* BS 1986 Oklahoma State University; PhD 1992 University of Texas, Austin

Deveney, James K. (1974) *Professor* BS 1970 Boston College; PhD 1974 Florida State University

Farley, Reuben W. (1968) *Professor* BS 1961 Randolph-Macon College; MA 1965 and PhD 1968 University of Tennessee

Haver, William E. (1977) *Professor* BS 1964 Bates College; MS 1967 Rutgers University; PhD 1970 State University of New York, Bingham

Lewis, Andrew M. (1994) *Assistant Professor* BA 1967 Harvard University; PhD 1993 University of California, Berkeley

- Lohr, C. Michael (1966) *Associate Professor of Mathematical Sciences and Teacher Education* BS 1960, MEd 1963 and EdD 1968 University of Virginia
- Raychowdhury, Pratip N. (1969) *Professor* BS and BA University of Calcutta; MS Brigham Young University; PhD 1966 George Washington University
- Schmeelk, John F. (1975) *Professor* BS 1962 Seton Hall University; MS 1965 New York University; PhD 1976 George Washington University
- Sedaghat, Hassan (1990) *Associate Professor* BS 1981, MA 1983 and PhD 1990 George Washington University
- Terrell, William J. (1991) *Associate Professor* BS 1975 North Carolina State University; MS 1976 Northwestern University; PhD 1990 North Carolina State University
- Vassilev, Janet (1998) *Assistant Professor* BA 1991 University of Chicago; MA 1993 and PhD 1997 University of California, Los Angeles

Division of Computer Science

- Brilliant, Susan S. (1989) *Associate Professor* BS 1972 Wake Forest University; MS 1977 Virginia Commonwealth University; PhD 1988 University of Virginia
- Cheng, Chao-Kun (1984) *Associate Professor* BA 1964 National Taiwan University; PhD 1970 Notre Dame University; PhD 1979 Clarkson University
- Kim, Yanggon (1996) *Assistant Professor* BS 1984 and MS 1986 Seoul National University, Korea; PhD 1995 Pennsylvania State University
- Murrill, Branson W. (1984) *Associate Professor* BS 1974 College of William & Mary; MS 1977 University of Virginia; PhD 1991 College of William & Mary
- Parker, Lorraine M. (1981) *Associate Professor* BS University of Bath; PhD 1981 University College of Swansea
- Primeaux, David (1996) *Assistant Professor* PhD 1975 and PhD 1975 University of Louvain; PhD 1996 University of Tennessee
- Resler, Daniel R. (1992) *Assistant Professor* BS 1978 Illinois State University; MS 1985 University of Colorado; PhD 1991 Queens University of Belfast

Division of Operations Research and Statistics

- Barnes, John A. (1990) *Assistant Professor* BS 1973 and MS 1976 North Carolina State University; PhD 1988 Virginia Polytechnic Institute and State University
- Davenport, James M. (1987) *Associate Professor* BA 1964 West Texas State University; MS 1969 and PhD 1971 Southern Methodist University
- Henry, Neil W. (1975) *Associate Professor of Mathematical Sciences and Sociology and Anthropology* BA 1958 Wesleyan University; MA 1960 Dartmouth College; PhD 1970 Columbia University
- Johnson, Robert E. (1982) *Associate Professor* BS 1976 and MA University of North Carolina, Greensboro; PhD 1983 University of North Carolina, Chapel Hill
- Mays, D'Arcy P. (1993) *Assistant Professor* BS 1988, MS 1989 and PhD 1993 Virginia Polytechnic Institute and State University
- Mays, James E. (1996) *Assistant Professor* BS 1990, MS 1991 and PhD 1995 Virginia Polytechnic Institute and State University
- Parnell, Gregory S. (1995) *Assistant Professor* BS 1970 State University of New York, Buffalo; MS 1974 University of Florida; PhD 1985 Stanford University
- Rein, Steven R. (1993) *Assistant Professor* BA 1987 University of California, Los Angeles; MA 1989 and PhD 1993 University of California, Berkeley
- Williamson, Patricia Pepple (1986) *Associate Professor* BS 1981, MS 1983 and PhD 1986 Bowling Green State University

Emeriti Faculty

- Minton, Paul D. *Professor Emeritus of Mathematical Sciences and Biostatistics* BS and MS Southern Methodist University; PhD North Carolina State University
- Murrill, Malcolm L. *Associate Professor Emeritus* BA Yale University; MS University of Richmond

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses, and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research, and a high standard of teaching. The

curriculum provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, computer science, mathematics, operations research, statistics, or related fields.

The Department of Mathematical Sciences offers a Bachelor of Science in Mathematical Sciences and a Bachelor of Science in Computer Science. Each degree contains a required core of courses that provide a foundation for more specialized work, while furnishing an introduction to a variety of areas in the mathematical sciences.

Students in the BS in Mathematical Sciences can choose from five areas of concentration.

1. **Applied Mathematics/Mathematical Sciences** concentrates on the analytical and computational techniques necessary to solve many of today's problems. These methods had been applied traditionally in such areas as chemistry and physics, but are now applied in many other areas.
2. **Computer Science/Mathematical Sciences** provides the student, through the mathematical foundations and the practical applications of computers, with the expertise to function effectively in this rapidly expanding discipline. This concentration equips the student with a solid education in computer science, yet gives the student the flexibility to pursue other areas of study.
3. **Mathematics/Mathematical Sciences** fosters the understanding of the power and the beauty of pure mathematics and its applications to various branches of knowledge.
4. **Operations Research/Mathematical Sciences** focuses on modern mathematical techniques for solving problems arising from other fields, such as engineering, business, or economics.
5. **Statistics/Mathematical Sciences** teaches students how mathematical models used in the investigation of uncertain phenomena are developed and applied to experimental and nonexperimental data.

As an alternative to the above concentrations, students may design an individual plan of study with the help of their advisers.

Mathematical sciences majors interested in teaching careers in early, middle, secondary, or special education can enroll in an Extended Teacher Education Program that results in the simultaneous awarding of a bachelor's degree in mathematical sciences and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Science, contact the School of Education's Office of Academic Services.

The **BS in Computer Science** is a rigorous, highly concentrated curriculum of computer science courses accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. It includes advanced study in several important areas of computer science and provides a strong foundation in this discipline.

The Department of Mathematical Sciences also offers a Mathematical Sciences Certificate in Computer Science or in statistics for students in other programs. Additionally, the department offers required and elective

courses to students in the mathematical sciences program, and to those in other fields of study.

Degree Requirements

Bachelor of Science in Mathematical Sciences.

The BS in Mathematical Sciences requires a minimum of 120 credits with at least 41 of those credits in courses labeled CSC, MAT, or STA. Along with the general education requirements of the College of Humanities and Sciences and the Academic Campus, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MAT 151 Precalculus Mathematics. No more than one mathematical sciences course at the 100 level (MAT, CSC, or STA) can count for the general requirements toward the BS degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

Mathematical sciences majors are required to complete all of the following:

A. Complete ONE of the following sequences:

1. BIO 151-152, L151, L152 Introduction to Biological Sciences and Laboratory I,II
2. CHE 101-102,L101,L102 General Chemistry and Laboratory I,II
3. PHY 207-208 University Physics or PHY 201-202 General Physics

B. Complete another course, including laboratory, in the natural sciences from the list of courses approved for satisfying the General Education requirements of the College of Humanities and Sciences. This course must be in the life sciences if the CHE or PHY sequence was selected in A above. It must be in the physical sciences if the BIO sequence was chosen in A above.

C. Complete one other course in the natural sciences OR complete a minor or second major offered outside the Department of Mathematical Sciences.

Completion of the previously mentioned requirements will satisfy the College of Humanities and Sciences natural sciences General Education requirements.

Core. All students are required to take

CSC 255 Structured Programming
MAT 200-201 Calculus with Analytic Geometry
MAT 211 Mathematical Structures
STA 212 Concepts of Statistics

Concentrations. By completing the listed requirements, students may obtain a designation on their transcript that their study has emphasized one of the following concentrations. Students may choose to meet the requirements of more than one concentration.

1. BS in Applied Mathematics/Mathematical Sciences

MAT 301 Differential Equations
MAT 307 Multivariate Calculus
MAT 310 Linear Algebra
MAT 512 Complex Analysis for Applications
MAT 517-518 Methods of Applied Mathematics
Six additional upper-level credits in mathematical sciences
(MAT 302 Numerical Calculus, MAT 437 Applied Partial Differential Equations, and MAT 511 Applied Linear Algebra are recommended.)

Students in this concentration should elect at least one upper-level course in chemistry or physics. (CHE 510 Atomic and Molecular Structure is recommended.)

2. BS in Computer Science/Mathematical Sciences

CSC 256 Data Structures and Advanced Programming
CSC 301 Introduction to Discrete Structures
CSC 311 Computer Organization and Assembler Language
CSC 312 Introduction to Operating Systems
CSC 401 Algorithm Analysis with Advanced Data Structures
CSC 403 Programming Languages
CSC 490 Research Seminar
One 500-level computer science course
Three additional upper-level credits in mathematical sciences

3. BS in Mathematics/Mathematical Sciences

MAT 307 Multivariate Calculus
MAT 310 Linear Algebra
MAT 501 Algebraic Structures
MAT 507-508 Analysis I and II
MAT 509 General Topology I
Six additional upper-level credits in mathematical sciences

4. BS in Operations Research/Mathematical Sciences

MAT 307 Multivariate Calculus
MAT 309 Introduction to Probability Theory
MAT 310 Linear Algebra
MAT 327 Mathematical Modeling OR STA 503 Introduction to Stochastic Processes
MAT 527-528 Mathematical Foundations of Operations Research
Six additional upper-level credits in mathematical sciences

5. BS in Statistics/Mathematical Sciences

MAT 307 Multivariate Calculus
MAT 309 Introduction to Probability Theory
MAT 310 Linear Algebra
STA 404 Introduction to Statistical Inference
STA 541 Applied Statistics for Engineers and Scientists
STA 544 Statistical Methods II
Three additional upper-level credits in statistics
Three additional upper-level credits in mathematical sciences

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. Likewise, students who meet the requirements for one of the concentrations and for the computer science degree can also achieve a double major, unless the concentration is computer science. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

With the approval of the departmental Undergraduate Credentials Committee and their academic adviser, students can design their own plan of study which will result in a BS in mathematical sciences. This student-planned curriculum must contain at least 24 credits in upper-level (300-500) mathematical sciences courses.

Degree Requirements

Bachelor of Science in Computer Science. The BS curriculum in computer science requires a minimum of 120 credits, with at least 57 of those credits in courses labeled CSC, MAT, or STA.

Along with the general education requirements of the College of Humanities and Sciences and the Academic Campus, students must also take required courses and fulfill specific degree requirements.

Based on the results of the Mathematics Placement Test, students may be required to take MAT 151 Precalculus Mathematics. No more than one mathematical sciences course at the 100 level can be applied to the general requirements for the BS degree. Credit

for 100-level mathematical sciences courses may not be applied toward the mathematical sciences requirements for the computer science major.

Computer science majors are required to complete all of the following:

A. Complete one of the following sequences:

1. CHE 101-102, L101-L102 General Chemistry and Laboratory I,II
2. PHY 207-208 University Physics

B. Complete another course, including laboratory, in the life sciences from the list of courses approved for satisfying the General Education requirements of the College of Humanities and Sciences.

C. Complete another course in the natural sciences. This course must be either an upper-level course in any natural science, or one of the courses listed in A above, or a second course in the life sciences from the list of courses approved for satisfying the General Education requirements for the College of Humanities and Sciences.

Completion of the above-mentioned requirements will also satisfy the College of Humanities and Sciences General Education requirements.

Required Mathematics and Statistics Courses

MAT 200-201 Calculus with Analytic Geometry

MAT 211 Mathematical Structures

STA 212 Concepts of Statistics

One of MAT 301 Differential Equations, MAT 302 Numerical Calculus, MAT 310 Linear Algebra, OR MAT 351 Applied Abstract Algebra.

Required Computer Science Courses

CSC 255 Structured Programming

CSC 256 Data Structures and Advanced Programming

CSC 301 Introduction to Discrete Structures

CSC 311 Computer Organization and Assembler Programming Language

CSC 312 Introduction to Operating Systems

CSC 401 Algorithm Analysis with Advanced Data Structures

CSC 403 Programming Languages

CSC 490 Research Seminar

CSC 505 Computer Architecture

CSC 508 Data Base Theory

Twelve additional credits chosen from upper-level computer science courses. STA 321 Introduction to Statistical Computing may be used to satisfy three of these credits.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in mathematical sciences. For a full description of this program, see Part XX of this *Bulletin*.

Minor Requirements – General

A minimum GPA of 2.0 must be achieved in the minor, and credit for 100-level mathematical sciences courses cannot be applied to the minor. Mathematical sciences and computer science majors cannot minor in a Department of Mathematical Sciences' program.

Minor in Mathematical Sciences

A minor in mathematical sciences consists of at least 18 credits offered by the Department of Mathematical Sciences, including a minimum of three credits of calculus and nine upper-level credits.

Neither STA 208, STA 210 nor any 100-level course can be used to fulfill the required 18 credits.

Minor in Computer Science

A minor in computer science consists of at least 18 credits offered by the Department of Mathematical Sciences, including CSC 255, CSC 256, MAT 211, and nine upper-level credits in computer science.

Minor in Statistics

The requirements for this minor are identical to those for the minor in mathematical sciences, except that the nine upper-level credits must be earned in statistics courses. It is strongly recommended, though not required, that students minoring in statistics take MAT 211 Mathematical Structures, and STA 212 Concepts of Statistics.

Post-Baccalaureate Programs in Mathematical Sciences

For students currently holding a bachelor's degree in the appropriate discipline, the Department of Mathematical Sciences offers the Master of Science in Mathematical Sciences, the Master of Science in Computer Science, and the Master of Education in Mathematics Education. For information about any of these programs consult the *Graduate Bulletin*.

Second Baccalaureate Degrees and Mathematical Sciences Certificates in Computer Sciences and Statistics

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, the department offers several options.

Second baccalaureate degrees are offered through the department. For detailed information about these programs consult Part VI of this *Bulletin*.

The **Mathematical Sciences Certificate in Computer Science** is available to students who have received bachelor's degrees in other areas and wish to pursue the study of computer science. Students who receive certification through this program equip themselves for many professional opportunities in the scientific community and with government agencies. The certification is also designed to allow interested students to prepare for graduate study in computer science.

Certification through this program requires a minimum of 33 credits in mathematical sciences courses at the 200 level or higher. Course work completed before or after receiving the bachelor's degree can be applied to the certification.

Included among the 33 credits must be the following:

- A. At least 18 credits from courses in mathematical sciences at the 300 level or higher earned at VCU after the candidate has received a bachelor's degree.
- B. Of the 18 credits listed in part A, at least 15 credits must be in computer science with at least six of these credits at the 400 level or higher; CSC 311 Computer Organization and Assembler Language, and CSC 401 Algorithm Analysis with Advanced Data Structures are required courses for certificate students.
- C. At least nine credits in approved electives in mathematical sciences other than computer science. A calculus course must be included among these credits.

Upon successful completion of all course work in five years or less, with a grade of "C" or better in each course and a GPA of 2.5 or better, the student is awarded the Mathematical Sciences Certificate in Computer Science. Successful completion of this program does not guarantee admission to the master's degree program in mathematical sciences.

Students seeking admission into this program should contact the Department of Mathematical Sciences.

The **Mathematical Sciences Certificate in Statistics** is open to students who have received bachelor's degrees in other areas. The primary goal of the program is to allow students with undergraduate majors in science, engineering and the social sciences an opportunity to acquire the formal training in statistics that is currently in demand in industry and government. Some students may also find this program a useful way to prepare for graduate study in statistics.

To be admitted to the program, a student must have completed a course of study leading to a Baccalaureate Degree. A student with limited college mathematics experience must take the Mathematics Placement Test before entering the program. Application materials and further information can be obtained by calling (804) 828-1301, TDD (804) 828-0100 or writing to the following address: Post-Baccalaureate Certificate in Statistics, Department of Mathematical Sciences, Virginia Commonwealth University, Richmond, VA 23284-2014.

The certificate program in statistics requires completion of a minimum of 32 approved credits at the 200 level or higher in mathematical sciences or related areas. A maximum of 14 credits toward certification can be transferred from course work completed before or after receiving the bachelor's degree. At least 18 approved credits must be from courses in statistics and probability at the 300 level or higher and must be taken at Virginia Commonwealth University (VCU). No more than six of these 18 credits can be from courses taken before admission to the certificate program. The student must achieve a grade-point average (on courses taken at VCU) of 2.5 or better with no grade below C. All requirements for the certificate must be completed within 5 years of admission to the program.

The following courses are required:

MAT 200/201 Calculus with Analytical Geometry (or equivalent)
 CSC 201 Introduction to Computing using FORTRAN
 OR CSC 255 Structured Programming (or equivalent)
 STA 210 Basic Practice of Statistics (or equivalent)
 MAT 309 Introduction to Probability Theory
 STA 404 Introduction to Statistical Inference
 STA 541 Applied Statistics for Engineers and Scientists
 STA 544 Statistical Methods II

Students will work closely with the program coordinator in selecting appropriate elective courses. While some students may have the background necessary for a 600-level graduate course, it is expected that most elective courses will be drawn from the 300-500-level STA offerings of the Department. Statistics courses taught in other units of the University may be credited toward the certificate with the permission of the program coordinator.

Courses in Computer Science

Students registering for CSC 201, 255 or MAT 131, 141, 151, 200, 211, or STA 208, 210 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU.

CSC 128 Computer Concepts and Applications. Semester course; 2 lecture and 1 recitation hour. 3 credits. Introduction to basic hardware and software concepts. Applications of various types of software in Psychology, Political Science, Statistics, Mass Communications and Education will be demonstrated and discussed. The recitation will provide instruction in Windows, word processing, spreadsheets, e-mail, library access, data base access and retrieval and the use of the Internet. Can be used to satisfy the College of Humanities and Sciences requirement for computer literacy. Students may not receive degree credit for both CSC 128 and any of CSC 150, BUS 160, BUS 161, and BUS 162.

CSC 191 Topics in Computer Science. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of the instructor. This course will teach selected topics in computer science. May be repeated for credit. See the *Schedule of Classes* for specific topics and prerequisites.

CSC 201 Introduction to Computing Using FORTRAN. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MAT 141 or MAT 151 or satisfactory score on the Mathematics Placement Test. Introduction to the concept and practice of structured programming using FORTRAN. Elementary computer concepts, problem solving, top-down design of algorithms, basic FORTRAN syntax, including control structures, arrays, and subroutines.

CSC 255 Structured Programming. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 141 or MAT 151 or satisfactory score on the Mathematics Placement Test. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using Java. Problem solving, top-down design of algorithms, object basic Java syntax, control structures, functions, and arrays.

CSC 256 Data Structures and Advanced Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 255 and MAT 211. Advanced programming using Java. Topics include program design, objects, classes, inheritance, files, strings, linked lists, stacks, queues, binary trees, recursion, and basic searching sorting techniques.

CSC 301 Introduction to Discrete Structures. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 255 and MAT 211. A continuation of MAT 211. Recursion and induction. Operations on sets and relations. Formal languages with an emphasis on finite state automata and grammars. Monoids and graphs (trees in particular). Elementary combinatorics and advanced Boolean algebra.

CSC 311 Computer Organization and Assembler Language Programming. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 256. Registers, instruction set issues, data representation, data storage and processing, subprograms and parameter passing, macros and conditional assembly, interrupts, I/O, and arithmetic, logical, and control operations.

CSC 312 Introduction to Operating Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 311. Computer systems design, I/O processing, secondary memory organization, command languages, memory management, and job scheduling.

CSC 391 Topics in Computer Science. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of the instructor. This course will teach selected topics in computer science. May be repeated for credit. See the *Schedule of Classes* for specific topics and prerequisites.

CSC 401 Algorithm Analysis with Advanced Data Structures. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 256 and CSC 301. Introduction to algorithm analysis and complexity classes. Advanced data structures topics include multiple linked lists,

height-balanced trees, B-trees, file organization, and graphs. Analysis of various searching and sorting algorithms. Algorithm design topics include divide-and-conquer, dynamic programming, greedy methods, and heuristic search.

CSC 403 Programming Languages. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 301 and CSC 311. Survey of representative modern programming languages. Formal definition of programming languages including specifications of syntax and semantics. Precedence, infix, prefix, and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines, and tasks. List processing, string manipulation, data description, and simulation languages. Runtime representation of program and data structures.

CSC 490 Research Seminar. Semester course; 1 lecture hour. 1 credit. Prerequisites: CSC 312, 401, and 403. Discussion of research and presentation methods in computer science, ethics in computer science, and other topics in computer science as stimulated by independent reading in selected areas. Each student will write at least two research papers and give at least one oral presentation.

CSC 492 Independent Study. Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least twelve credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

CSC 502 Concepts of Concurrency. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 312 and CSC 401. Software and hardware mechanisms for providing mutual exclusion in uniprocessor and multiprocessor environments. Concurrency problems and solutions in a distributed environment including message passing and remote procedure calls.

CSC 504 Compiler Construction. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 401 and CSC 403. Review of programming language structures, translation, loading, execution, and storage allocation. Compilation of simple expressions and statements. Organization of a compiler. Use of bootstrapping and compiler writing languages.

CSC 505 Computer Architecture. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 301 and CSC 311. Basic digital circuit combinational logic, data transfer, and digital arithmetic. Memory and memory access, control functions, CPU organization, microprogramming, input/output interfaces.

CSC 506 Computer Networks and Communications. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 312. Theoretical and applied analysis of basic data communication systems. Design of networks in the framework of the OSI reference model. Local and Wide Area Networks. Performance analysis of networks. Error control and security.

CSC 508 Data Base Theory. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 401. Design and implementation of hierarchical, network, and relational data base systems. Relational algebra, normal forms, and normalization.

CSC 509 Artificial Intelligence. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 401 and CSC 403. Problem spaces, problem-solving methods, game playing, knowledge representatives, expert systems, natural language understanding.

CSC 511 Computer Graphics. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 401 and MAT 310. Presents mathematical techniques for picture development and transformation, curve and surface approximation and projections, graphical languages and data structures and their implementation, graphical systems (hardware and software).

CSC 519 Software Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 401. Systematic approach to the development and maintenance of software and the associated documentation.

Includes software life cycle, scheduling and budgeting, configuration management, quality assurance, and software tools.

CSC 521 Introduction to the Theory of Computation. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 301. An introduction to automata theory, formal languages and computability. Topics include finite automata, pushdown automata, Turing machines, decidability and computational complexity.

CSC 525 Introduction to Software Analysis, Testing, and Verification. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 401 and 403. An introduction to concepts and techniques used in the analysis of software for certain properties. Using analytic results to derive test data and verify the correct implementation of programs. Flow graphs, fault/failure model, theoretical and practical limitations. Control flow, data flow, and error flow analysis. Testing strategies including random, structural, mutation, and error flow. Software metrics.

CSC 526 Theory of Programming Languages. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 403. An introduction to the formal semantics of programming languages, logic programming and functional programming. Topics include denotational semantics, attribute grammars, Backus Normal Form Functional Programming, fixed point semantics, model-theoretic semantics and PROLOG.

CSC 554 Applications of Computers in the Teaching of Mathematics I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: 17 credits at the 200 level or above in mathematics or permission of the instructor. Introduction to computers and programming language, BASIC. Applications of the computer in algebra, geometry, trigonometry, statistics, and calculus. Not applicable toward certificate program, BS, or MS degree in mathematical sciences.

CSC 591 Topics in Computer Science. Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisites may vary. Permission of the instructor required. Course is open to qualified undergraduates. Selected topics in computer sciences such as: Theory of data bases, information retrieval and artificial intelligence.

Courses in Mathematics

Students registering for CSC 201, 255 or MAT 131, 141, 151, 200, 211, or STA 208, 210 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Credit for no more than one course may be earned from among MAT 101, MAT 111/BUS111, MAT 141, and MAT 151.

MAT 001 Elementary Algebra. Semester course; 3 lecture or 3 laboratory-tutorial hours. No credit. Prerequisite: Permission of the department chair. The purpose of this course is to provide laboratory and tutorial instruction for those seeking remediation or review of high school algebra. Topics include basic properties of real numbers, operations with algebraic expressions, solution of equations and inequalities, exponents and radicals, introduction to functions, and graphing.

MAT 131 Introduction to Contemporary Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 001 or satisfactory score on the Mathematics Placement Test. Topics include optimization problems; data handling; growth and symmetry; and mathematics with applications in areas of social choice. Major emphasis is on the process of taking a real-world situation, converting the situation to an abstract modeling problem, solving the problem and applying what is learned to the original situation. (Serves as a prerequisite for STA 208 or 210, but does not serve as a prerequisite for calculus or other advanced mathematical sciences courses.)

MAT 141 Algebra with Applications. Semester course; 3 lecture hours. 3 credits. Prerequisites: One year of high school algebra and a satisfactory score on the Mathematics Placement Test. Topics include sets, functions, exponents, logarithms, matrix algebra, systems of linear equations, inequalities, binomial theorems, sequences, series, complex

numbers, and linear programming. Students may not receive degree credit for both MAT 141 and MAT 101.

MAT 151 Precalculus Mathematics. Semester course; 3 lecture and 1 mathematics laboratory/recitation hours. 4 credits. Prerequisite: MAT 141 or satisfactory score on the Mathematics Placement Test. Concepts and applications of algebra and trigonometry. Topics include graphics, transformations and inverses of functions; linear, exponential, logarithmic, power, polynomial, rational, and trigonometric functions.

MAT 185 Computational Linear Algebra. Semester course; 2 lecture hours. 2 credits. Corequisite: MAT 200. Prerequisite: MAT 141 or MAT 151 or satisfactory score on the Mathematics Placement Test. Euclidean vectors, systems of linear equations, matrices, determinants, matrix inverse independence, bases, eigenvector and eigenvalue problems. (Course intended for freshmen engineering students.)

MAT 191 Topics in Mathematics. Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. For a course to meet the general education requirements it must be so stated in the *Schedule of Classes*. See the *Schedule of Classes* for specific topics and prerequisites.

MAT 200-201 Calculus with Analytic Geometry. Continuous course; 4 lecture hours. 4-4 credits. Prerequisite for MAT 200: MAT 151 or satisfactory score on the Mathematics Placement Test (algebra portion). Prerequisites for MAT 201: MAT 200. Limits, continuity, derivatives, differentials, antiderivatives, and definite integrals. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

MAT 211 Mathematical Structures. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 151 or a satisfactory score on the Mathematics Placement Test. An introduction to mathematical logic and set theory, including applications in Boolean algebras and graph theory. (A core course for mathematical sciences.)

MAT 291 Topics in Mathematics. Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the *Schedule of Classes* for specific topics and prerequisites.

MAT 301 Differential Equations. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 201. Solution of ordinary differential equations of first order. Linear differential equations with constant coefficients using operator methods. Series solutions and applications.

MAT 302 Numerical Calculus. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CSC 201 or demonstrated knowledge of FORTRAN and MAT 201. An introduction to numerical algorithms for solving systems of linear equations, finding zeroes, definite integration, minimization, etc. Those features of FORTRAN that affect the precision of numerical computations will be included.

MAT 303 Investigations in Geometry. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MAT 131 and STA 208, 210 or 212. A study of topics in Euclidean geometry to include congruence, similarity, measurement, coordinate geometry, symmetry, and transformation in both two and three dimensions. These topics will be investigated using manipulatives and computer software. (May be used for credit towards the degree by mathematical sciences majors; but does not count toward the 24 upper division mathematical sciences credits required for these majors.)

MAT 305 Elementary Number Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 211. Divisibility, congruences, Euler phi-function, Fermat's Theorem, primitive roots, Diophantine equations.

MAT 307 Multivariate Calculus. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 201. The calculus of vector-valued functions and of functions of more than one variable. Partial derivatives, multiple integrals, line integrals, surface integrals, and curvilinear coordinates. Lagrange multipliers; theorems of Green, Gauss, and Stokes. Applications.

MAT 309 Introduction to Probability Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 201. A study of the mathe-

matical theory, including finite and infinite sample spaces, random variables, discrete and continuous distributions, mathematical expectation, functions of random variables, and sampling distributions.

MAT 310 Linear Algebra. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 200 and (MAT 211 or 201). Systems of linear equations, vector spaces, linear dependence, bases, dimensions, linear mappings, matrices, determinants, quadratic forms, orthogonal reduction to diagonal form, eigenvalues, and geometric applications.

MAT 327 Mathematical Modeling. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 200. Fundamental concepts of mathematical modeling. Differential equation models. Optimization models. Probabilistic models. Practical problems will be discussed throughout.

MAT 351 Applied Abstract Algebra. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 211. A survey of several areas in applied abstract algebra which have applications in computer science such as groups, codes, matrix algebra, finite fields, and advanced graph theory.

MAT 391 Topics in Mathematics. Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the *Schedule of Classes* for specific topics and prerequisites.

MAT 437 Applied Partial Differential Equations. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and 307. Parabolic (heat), hyperbolic (wave), and elliptic (steady-state) partial differential equations are studied. Solution techniques are demonstrated, including separation of variables and integral transforms. Practical problems and applications are emphasized.

MAT 492 Independent Study. Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chairman must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

MAT 493 Mathematical Sciences Internship. Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Mathematical sciences majors only with junior or senior standing. Admission by permission from the department chairman. Through placement in a position in business, industry, government, or the university, the student will serve as an intern in order to obtain a broader knowledge of the mathematical sciences and their applications.

MAT 501 Introduction to Abstract Algebra. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 211 and 310 (or their equivalents). An introduction to groups, rings, and fields from an axiomatic point of view. Coset decomposition and basic morphisms.

MAT 505 Modern Geometry. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 307. Corequisite: MAT 310. Topic in Euclidean, projective, and non-Euclidean geometries from a modern viewpoint.

MAT 507-508 Analysis I-II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 211, 307, and 310 or permission of instructor. Theoretical aspects of calculus, sequences, limits, continuity, infinite series, series of functions, integration, differential geometry.

MAT 509-510 General Topology I-II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 211 and MAT 307. Foundations and fundamental concepts of point-set topology. Topological spaces, convergence, connected sets, compactness, product spaces, quotient spaces, function spaces, separation properties, metrization theorems, mappings, and compactifications.

MAT 511 Applied Linear Algebra. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 310. The algebra of matrices, the theory of finite dimensional vector spaces, and the basic results concerning eigenvectors and eigenvalues, with particular attention to applications.

MAT 512 Complex Analysis for Applications. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 307. The algebra and geometry of complex numbers, analytic functions, integration, series, contour integration, analytic continuation, conformal mapping, with particular attention to applications.

MAT 515 Numerical Analysis I. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 310 or (MAT 201 and MAT 185. Knowledge of a programming language recommended. Solutions of equations, interpolation and approximation, numerical integration, iterative methods for solving linear equations, calculation of eigenvalues and eigenvectors. Selected algorithms may be programmed for solution on computers.

MAT 516 Numerical Analysis II. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 515. Numerical solution of initial value problems in ordinary differential equations, 2 point boundary value problems. Introduction to numerical techniques for solving partial differential equations. Selected algorithms may be programmed for solution on computers.

MAT 517-518 Methods of Applied Mathematics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 301 and MAT 307. Vector analysis, matrices, complex analysis, special functions, Legendre and Hermite polynomials. Fourier series, Laplace transforms, integral equations, partial differential equations, boundary-value and initial-value problems.

MAT 520 Game Theory and Linear Programming. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 310. The mathematical basis of game theory and linear programming. Matrix games, linear inequalities and convexity, the minimax theorems in linear programming, computational methods, and applications.

MAT 521 Introduction to Algebraic Number Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 501. Introduction to algebraic numbers and algebraic number fields with emphasis on quadratic and cyclotomic fields. Units, primes, unique factorization.

MAT 523 Discrete Event Simulation. Semester course; 3 lecture hours. 3 credits. Prerequisite: STA 212 and MAT 309 or their equivalents, or permission of instructor. An introduction to the theory and practice of discrete event simulation. Topics include random variable generation, model development and validation, variance reduction techniques, and statistical analysis of output. Applications will be taken from areas such as queuing theory and manufacturing systems. A high-level simulation language will be utilized.

MAT 525 Introduction to Combinatorial Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 211, 310, or permission of instructor. Introduction to the problems and methods of solution in the enumeration, existence, and construction of some discrete mathematical structures. Discussion of generating functions, recurrence relations, Ramsey's theorem, matching theory, combinatorial designs, Latin squares, and linear coding theory.

MAT 527-528 Mathematical Foundations of Operations Research. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: CSC 201 or 255, MAT 310. (MAT 309 is prerequisite for MAT 528 and STA 503 is strongly recommended for MAT 528). Introduction to the mathematical foundations of deterministic and stochastic operations research, including the simplex method for linear programming, nonlinear optimization, dynamic programming, and some stochastic models. Real world applications will be discussed throughout.

MAT 530 The History of Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisite: 17 credits at the 200 level or above in mathematical sciences or permission of instructor. Surveys major trends in the development of mathematics from ancient times through the nineteenth century and considers the cultural and social contexts of mathematical activity. Either MAT 530 or MAT 531 (but not both) may be applied to the master's degree in mathematical sciences or the MS degree in computer science. Both MAT 530 and MAT 531 may be applied to the MEd degree in mathematics education.

MAT 531 Expositions in Modern Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisite: Six credits at the 400 level or above in mathematical sciences. Studies descriptively several major ideas relevant to present-day mathematics, such as the advent of pure abstraction, difficulties in the logical foundations of mathematics, the impact of mathematics and statistics in the twentieth century, and the computer revolution. Either MAT 530 or MAT 531 (but not both) may be applied to the master's degree in mathematical sciences or the MS degree in computer science. Both MAT 530 and MAT 531 may be applied to the MEd degree in mathematics education.

MAT 591 Topics in Mathematics. Semester course; 1-3 credits. May be repeated for credit with different topics. Prerequisite: Permission of the instructor. Open to qualified undergraduates. A study of selected topics in mathematical sciences. See the *Schedule of Classes* for specific topics and prerequisites.

Courses in Statistics

STA 208 Statistical Thinking. Semester course; 2 lecture hours and 1.5 laboratory hours. 3 credits. Prerequisite: MAT 131, MAT 141, or MAT 151, or satisfactory score on the Mathematics Placement Test. An exploration of the use of statistics in the world around us through in-depth case studies. Emphasis is on understanding statistical studies, charts, tables and graphs frequently seen in various media sources. Laboratories involve learning activities centered on case studies. Not open to MAS or CSC majors.

STA 210 Basic Practice of Statistics. Semester course; 2 lecture hours and 1.5 laboratory hours. 3 credits. Prerequisite: MAT 131, MAT 141, MAT 151, or a satisfactory score on the Mathematics Placement Test. Topics include examining distributions, examining relationships, producing data, sampling distributions and probability, introduction to inference. Designed for students seeking a BS degree who will likely take another quantitative reasoning course for which statistics may be a prerequisite. Not open to MAS or CSC majors.

STA 212 Concepts of Statistics. Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Prerequisite: MAT 200 and 211. An introduction to the nature of statistical thinking and the application of abstract systems to the resolution of nonabstract problems. Probability models for stochastic events. Parametric representations. Estimation, testing hypotheses and interval estimation with application to classical models. Laboratories include activity based learning and computer usage. (A core course for mathematical sciences.)

STA 214 Applications of Statistics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: STA 210. A study of the nature and application of statistical methods including analysis of variance, regression, and correlation. Special topics include distribution free methods in various statistical problems. (Psychology majors see PSY 214.)

STA 291 Topics in Statistics. Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. Specific topics may fulfill General Education Requirements. See the *Schedule of Classes* for specific topics and prerequisites.

STA 321 Introduction to Statistical Computing. Semester course; 3 lecture hours. 3 credits. Prerequisites: STA 212, CSC 201 or CSC 255, and MAT 200, or their equivalents. An overview of topics central to the applications of computers in statistical practice: data storage and retrieval, data modification and file handling, use of statistical software (SAS, SPSSX, BMDP, etc.), statistical algorithms, random number generation, and applications.

STA 391 Topics in Statistics. Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. See the *Schedule of Classes* for specific topics and prerequisites.

STA 404 Introduction to Statistical Inference. Semester course; 3 lecture hours. 3 credits. Prerequisites: Both STA 212 and MAT 309, or permission of instructor. Framework for statistical inference. Point and interval estimation of population parameters. Hypothesis testing concepts, power functions, Neyman-Pearson lemma, and likelihood ratio tests. Elementary decision theory concepts.

STA 492 Independent Study. Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

STA 503 Introduction to Stochastic Processes. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 307 and 309. A continuation of topics given in MAT 309. An elementary introduction to stochastic processes and their applications, including Markov chains and Poisson processes.

STA 513-514/BIS 513-514 Mathematical Statistics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 307. Probability, random variables and their properties, distributions, moment generating functions, limit theorems, estimators and their properties; Neyman-Pearson and likelihood ratio criteria for testing hypotheses.

STA 523/BIS 523 Nonparametric Statistical Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: Any two semesters of statistics or permission of instructor. Estimation and hypothesis testing when the form of the underlying distribution is unknown. One-, two-, and k-sample problems. Tests of randomness, Kolmogorov-Smirnov tests, analysis of contingency tables and coefficients of association.

STA 533 Applied Linear Regression. Semester course; 3 lecture hours. 3 credits. Prerequisites: Any two semesters of statistics and one semester of calculus. An introduction to the concepts and methods of regression analysis, including simple linear regression and correlation, multiple regression and correlation. Application of the multiple regression model to the analysis of variance.

STA 541 Applied Statistics for Engineers and Scientists. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 200-201 or equivalent and operational knowledge of MS-DOS. An introduction to applied statistics intended primarily for graduate students in Mathematical Sciences and the Cooperative Graduate Engineering Program. The fundamental ideas of the collection and display of information, descriptive statistics and exploratory data analysis, elementary probability theory, frequency distributions, and sampling are covered. Other topics include tests of hypothesis and confidence intervals for one or two sample problems; ANOVA, principles of one-factor experimental designs including block designs and Latin squares, fixed and random effects, multiple comparisons; correlation and linear regression analysis; control charts; contingency tables and goodness of fit.

STA 543/BIS 543 Statistical Methods I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Graduate standing, or one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including: the collection and display of information, data analysis, and statistical measures; variation, sampling, and sampling distributions; point estimation, confidence intervals, and tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance, and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit. Students may not receive degree credit for both STA 541 and STA 543. STA 543 is not applicable toward the MS degree in mathematical sciences or the MS degree in computer science.

STA 544/BIS 544 Statistical Methods II. Semester course; 3 lecture hours. 3 credits. Prerequisite: STA 541 or STA 543, or equivalent. Introductory treatment of the design of experiments and the statistical analysis of experimental data based on analysis of variance (ANOVA) and multiple-regression problems will be covered. Includes the use of a statistical software package for data analysis.

STA 549 Statistical Quality Control. Semester course; 3 lecture hours. 3 credits. Prerequisite: STA 212 and MAT 309 or their equivalents, or permission of instructor. Methods of statistical quality control, with an emphasis on the probabilistic and statistical foundations used in designing and evaluating the techniques. Includes variables and

attributes control charts, CUSUM charts, process capability analysis, design of experiments, and acceptance sampling.

STA 591 Topics in Statistics. Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. Course open to qualified undergraduates. Selected topics in statistics.

Department of Military Science

The military science curriculum teaches the principles of management and leadership as a foundation for civilian and military careers. Graduates of this program are eligible for appointments as commissioned officers in the United States Army, the United States Army Reserve, or Army National Guard.

Scholarships

Two- and three-year Army ROTC scholarships are awarded competitively, based strictly on merit, to the most outstanding students who apply. Academic abilities and extracurricular achievements are factors considered in the selection. Army ROTC scholarships pay for tuition and fees (\$2,500 per semester), books (\$225 per semester), and \$150 per month (Maximum \$1,500 per school year) for living expenses.

The Four-Year Program

The traditional Four-Year Program is divided into two parts.

In the first two years, the Basic Course covers subjects like military history, traditions and organizations, and national defense. There will be a heavy emphasis on leadership development. There is no commitment for the first two years, if students don't have an ROTC scholarship.

Upon successful completion of the Basic Course, students will be eligible to compete for entrance into the Advanced Course. During the Advanced Course, the curriculum consists of instruction and practice in management, tactics, ethics, professionalism, and continued leadership development.

During your four years, all ROTC textbooks, uniforms and essential materials will be furnished at no cost. Also, if selected for the Advanced Course, students will receive an allowance of \$1,500 each year.

During the summer between junior and senior years, students will attend Advanced Camp, a training session that provides a hands-on experience for the Army, and practice in everything learned, especially leadership. Advanced Camp lasts five weeks with pay, travel, and equipment provided.

The Two-Year Program

If the first two years of ROTC are missed, or students transfer from a junior or community college, a commission may be obtained through the Two-Year Program.

In this program students attend the ROTC Basic Camp, Camp Challenge, for five weeks during the summer. Upon completion of Camp Challenge, students are eligible for the Advanced Course.

Simultaneous Membership Program (SMP)

This program allows students to become members of the Army National Guard or the Army Reserve while enrolled in Army ROTC.

Advanced ROTC SMP students are paid for their Guard/Reserve training plus they receive the ROTC allowance of \$1,500 for each of their two years in the Advanced Course.

ROTC for Veterans

If students are veterans, military experience could fulfill the necessary requirements for the ROTC Basic Course. Veterans may enroll directly in the Advanced Course. In addition to any financial assistance received from ROTC, veterans are still qualified to receive any and all VEAP/GI Bill/Army College Fund benefits to which they are entitled.

Upper-Level Credit Limitation for College of Humanities and Sciences Students

For students in the College of Humanities and Sciences, only three of the eight required 300-level Military Science credits can be applied to the University's 45 upper-level credit requirements.

Courses in Military Science

MIS 101 Basic Military Science. Semester course; 2 lecture hours. 2 credits. Study of the United States Defense Department and the organization and structure of the Army.

MIS 102 Basic Military Science. Semester course; 2 lecture hours. 2 credits. Examines leadership doctrine, and their tactics and operations; physical fitness; briefing and writing skills; life-saving techniques; drill and ceremony; basic rifle marksmanship; rappelling; and a field leadership training exercise.

MIS 201 Basic Military Science. Semester course; 2 lecture and 1 laboratory hours. 2 credits. Examines professional ethics and their relationship to military leadership and operations, decision making; briefing and writing skills; life saving techniques; drill and ceremony; basic rifle marksmanship; rappelling; and executing a field leadership reaction course.

MIS 202 Basic Military Science. Semester course; 2 lecture and 1-1/2 laboratory hours. 2-2 credits. Prerequisites: MIS 201 or permission of the instructor. Examines individual soldier skills and movement techniques; Army doctrine; squad-level tactics; rifle marksmanship; land navigation; physical fitness training; water survival; and requires participation in a one day field training exercise.

MIS 203 Basic Military Science. 0-6 credits. Optional ROTC Basic Camp. Five weeks of training at a military installation. Travel pay and salary stipend provided through the military science department. Student not obligated to any military service. Basic Camp graduates are eligible to enroll in advanced military sciences courses.

Prerequisites for enrolling in advanced military science courses are successful completion of three basic military science courses or MIS 203 Basic Military Science for six credits. An approved military history course (preferably HIS 350) is a prerequisite for commissioning as an officer and should be taken prior to beginning the advanced course. For College of Humanities and Science majors, only three of the eight 300-level military science credits may be used in fulfillment of the 45 upper-level credit requirement for graduation.

MIS 301-302 Advanced Military Science. Continuous course; 2 lecture and 1-1/2 laboratory hours. 2-2 credits. Management principles and leadership; instructional methods; organization and function of Army branches; theory and dynamics of unit operations and exercise of command.

MIS 303-304 Advanced Military Science. Continuous course; 2 lecture and 1 laboratory hour. 2-2 credits. Staff organization and procedures, orders and operations, training management, logistics, military law, and the exercise of command.

MIS 306 Military Science. 0 credits. Prerequisite: MIS 302. ROTC Advanced Camp. The ROTC camp summer practicum is six weeks long. Individual and group experience for application of leadership training. Exposure to leadership situations that require decisions made under physical and mental stress conditions.

Department of Philosophy and Religious Studies

Peter Vallentyne

Associate Professor and Department Chair (1988) BA 1978 McGill University; MA 1981 and PhD 1984 University of Pittsburgh

Coleman, Earle J. (1971) *Associate Professor of Philosophy* AB 1965 Illinois College; MA 1969 and PhD 1971 University of Hawaii

Edwards, Clifford W. (1975) *Professor of Religious Studies* BA 1954 Drew University; MDiv 1958 Garrett Theological Seminary; PhD 1964 Northwestern University

Ellis, Anthony J. (1990) *Professor of Philosophy* BD 1967 and MA 1968 London University

Merricks, Trenton D. (1994) *Assistant Professor of Philosophy* BA 1989 Ohio State University; MA 1992 Brown University; PhD 1994 Notre Dame University

Mills, Eugene (1991) *Associate Professor of Philosophy* BA 1980 and MA 1985 University of Virginia; PhD 1990 University of California, Berkeley

Redmon, Robert B., Jr. (1975) *Associate Professor of Philosophy* BS 1961 North Carolina State University; MA 1966 and PhD 1969 University of North Carolina, Chapel Hill

Spiro, Jack D. (1984) *Affiliate Professor of Religious Studies and Director, Judaic Studies* BA 1954 Tulane University; MA 1958 Hebrew Union College; EdD 1979 University of Virginia

Wadud, Amina (1992) *Assistant Professor of Religious Studies* BS 1975 University of Pennsylvania; MA 1982 and PhD 1988 University of Michigan

Wood, Mark (1997) *Assistant Professor of Religious Studies and African-American Studies* BA 1982 and MA 1984 California State University, Chico; MPhil 1989 and PhD 1994 Syracuse University

Emeriti Faculty

Hall, Thomas O., Jr. *Professor Emeritus of Religious Studies* AB Hampden-Sydney College; BD, ThM and ThD Southwestern Baptist Theological Seminary

Pratt, Glenn R. *Associate Professor Emeritus of Religious Studies* AB Union College; BD and ThM Princeton Theological Seminary; STD Temple University

The Department of Philosophy and Religious Studies offers a Bachelor of Arts in Philosophy and a Bachelor of Arts in Religious Studies – each a distinct undergraduate program.

Philosophy aims at a deeper understanding of matters that should most concern the human race. Philosophical questions crop up in science, religion, art, morality, politics, medicine, and in everyday life. Students enrolled in philosophy are encouraged to think seriously about fundamental issues in all these domains and to formulate coherent and well-grounded points of view. Because of its extensive use of critical and analytical reasoning, philosophy equips the student for careers in medicine, law,

business, and other fields that require careful thought and the clear expression of ideas.

Religious Studies focuses on religion as a major aspect of human culture. Students enrolled in religious studies are encouraged to think critically and systematically about religion and its role in culture, and to write clearly and cogently about it. Many students choose to major in religious studies because it provides a broad and flexible degree in the humanities, which might serve as preparation for any other vocation. Some students major in religious studies to prepare for graduate programs in universities, seminaries, and professional schools, becoming clergy, chaplains, and teachers of religion. Others are preparing for specialized ministries in radio, television, church-related publications, and denominational boards and agencies. An increasing demand exists for public school teachers certified to teach religious studies.

Additionally, the department offers elective courses for students in other programs, as well as for those majoring in philosophy or religious studies.

Degree Requirements

Bachelor of Arts in Philosophy. The bachelor of arts curriculum in philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Majors in philosophy are required to take PHI 103 Ancient Greek and Medieval Western Philosophy, PHI 104 Modern Western Philosophy, one of PHI 211, 212, 213 (introductory ethics courses), PHI 222 Logic; three of the following courses with at least one course from group (a) and group (b):

- a) PHI 320 Philosophy of Law, PHI 327 Ethical Theory, PHI 335 Social and Political Philosophy; and
- b) PHI 301 Mind and Reality, PHI 302 Reason and Knowledge, PHI 303 Philosophy of Language; and
- c) PHI 391 Topics in Philosophy; and
- d) at least one semester of PHI 490 Seminar in Philosophy.

Students must also fulfill the general education requirements of the College of Humanities and Sciences for the BA degree and Academic Campus requirements.

Bachelor of Arts in Religious Studies. The bachelor of arts curriculum in religious studies requires a minimum of 120 credits, with at least 30 of those credits in religious studies or in courses listed below as acceptable for religious studies credit.

Majors are required to take RST 101 Introduction to Religious Studies; six credits from RST 301 Introduction to Old Testament, RST 302 Introduction to New Testament, RST 312 World Religions, RST 317 Islam, RST 318, 319 History of Jewish People; RST 334 Religion in Contemporary America; six credits from RST 311 World Religions, RST 320 Taoism, RST 408 Indian Tradition, RST 410 The Chinese Tradition in Philosophy, RST 412 Zen Buddhism; six credits from RST 326 Existentialism, RST 333 Psychology and Religious Experience, RST 350 World Classics of Spirituality, RST 360 Sociology of Religion, RST 430 Philosophy of Religion; three credits from RST 490 Seminar in

Religious Studies, RST 491 Topics in Religious Studies, RST 492 Independent Study.

Up to six credits in Hebrew, Greek, Arabic, Japanese, or Chinese language courses may be accepted within the required 30 credits of the program if approved by the curriculum committee of the religious studies division. The curriculum committee may approve occasional substitutions within religious studies major requirements should the needs and background of the student warrant such substitutions.

Students must fulfill the general education requirements of the College of Humanities and Sciences and Academic Campus requirements for the BA degree.

Minor Requirements

Minor in Philosophy. The philosophy minor consists of 18 credits, with at least nine of those credits in upper-level (300-400) courses and either PHI 103 Ancient Greek and Medieval Philosophy or PHI 104 Modern Western Philosophy.

Minor in Philosophy of Law. The minor in philosophy of law consists of 18 credits, to include PHI 327 Ethical Theory, PHI 335 Social and Political Philosophy, PHI 320 Philosophy of Law and one course from the following – PHI 211 History of Ethics, PHI 212 Ethics and Applications and PHI 213 Ethics and Health Care. Philosophy minors must also take two of the following courses: POS 341, 342 History of Political Thought, POS 314 American Constitutional Law, and HIS 369-370 American Constitutional and Legal Development.

Minor in Religious Studies. The minor in religious studies consists of 18 credits in religious studies, with at least nine of those credits in upper-level courses.

Minor in Judaic Studies

Jack C. Spiro

Affiliate Professor of Religious Studies and Director, Judaic Studies BA 1954 Tulane University (1984) MA 1958 Hebrew Union College; EdD 1979 University of Virginia

The minor in Judaic studies consists of 18 credits chosen from the following: RST 301 Introduction to the Old Testament, RST 304 Introduction to Judaism, RST 305 Hebrew Prophets, RST 335 The American Jewish Experience, RST 407 Modern Jewish Thought, HIS 324 The Holocaust, HIS 325, 326/ RST 318, 319 History of the Jewish People and other courses which may be developed with approval of the director.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in philosophy. A full description of this program appears in Part XX of this *Bulletin*.

Courses in Philosophy

PHI 101 Introduction to Philosophy. Semester course; 3 lecture hours. 3 credits. An introduction to some of the main branches of philosophy. Some of the issues that might be addressed are: What is knowledge? Is reason or experience the basis for all knowledge? Can

we have knowledge of the past, or of the future? What is Truth? Does God Exist? Is there a mental realm separate from the material realm? Are the laws of nature deterministic? Do we have free will? What makes an action morally permissible? What is the proper role of the State in regulating our lives? This course is directed primarily at first and second year students.

PHI 103 Ancient Greek and Medieval Western Philosophy. Semester course; 3 lecture hours. 3 credits. A survey of Western Philosophy from the Ancient Greeks (e.g., Socrates, Plato, and Aristotle) through the medieval period (e.g., Augustine and St. Thomas Aquinas).

PHI 104 Modern Western Philosophy. Semester course; 3 lecture hours. 3 credits. A survey of Western Philosophy from the Renaissance to the nineteenth century (e.g., Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Hegel, and Marx).

PHI 211 History of Ethics. Semester course; 3 lecture hours. 3 credits. Corequisite: ENG 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics and their application to fundamental moral questions, as illustrated by the ethical systems of such historically important Western philosophers as Plato, Aristotle, Augustine, Hume, Mill and Kant.

PHI 212 Ethics and Applications. Semester course; 3 lecture hours. 3 credits. Corequisite: ENG 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in different areas. Such problems as abortion, the welfare of animals, world hunger, pornography, capital punishment, nuclear defense, sexual behavior, environmental ethics, and reverse discrimination may be used as illustrations. (Credit may be received for only one of PHI 212, 213 or 214.)

PHI 213 Ethics and Health Care. Semester course; 3 lecture hours. 3 credits. Corequisite: ENG 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in health care. The following issues may be used as illustrations: abortion, euthanasia and the right to die, human experimentation, treating mental illness, genetic technologies, the concepts of health and disease, and the funding of health care. (Credit may be received for only one of PHI 212, 213, or 214.)

PHI 214 Ethics and Business. Semester course; 3 lecture hours. 3 credits. Corequisite: ENG 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in business. The following issues arise in affirmative action, investment in unethical companies or countries, product safety, whistle blowing and advertising. (Credit may be received for only one of PHI 212, 213, or 214.)

PHI 221 Critical Thinking. Semester course; 3 lecture hours. 3 credits. An introduction to inductive and deductive reasoning, with emphasis on common errors and fallacies.

PHI 222 Logic. Semester course; 3 lecture hours. 3 credits. An evaluation of deductive arguments utilizing the methods of symbolic logic.

PHI 291 Topics in Philosophy. Semester course; variable; 1-4 credits. Prerequisite: As specified in the *Schedule of Classes* or written permission of instructor. An introductory study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the *Schedule of Classes* for specific topic to be offered each semester.

PHI 301 Mind and Reality. Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHI 222 and one of PHI 101, 103, or 104 or permission of instructor. An examination of central metaphysical issues, for example, the mind-body problem, free will, causality, action, realism, and the problems of universals.

PHI 302 Reason and Knowledge. Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHI 222 and one of PHI 101, 103, or 104 or permission of instructor. An examination of central epistemological issues, for example, the problem of justification, empirical knowledge, perception, rationality, and truth.

PHI 303 Philosophy of Language. Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHI 222 and 6 additional credits, at least 3 of which must be from PHI 101, 103, or 104, or permission of the instructor. An examination of central issues in the philosophy of language; for example, the nature of meaning and reference, reductionism, properties of languages, and the character of artificial symbols systems.

PHI 320 Philosophy of Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy including PHI 222 and one of PHI 211, 212, 213, 214 or permission of instructor. A critical examination of the nature of law and criminal justice in the light of important human values. The following topics will be considered: the nature of law and legal reasoning, the legal enforcement of morality, and such controversies as punishment versus rehabilitation, and the right to due process versus the need for public safety.

PHI 326/RST 326 Existentialism. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in Philosophy (exclusive of PHI 221 and PHI 222) or permission of instructor. An examination of the nature of truth, freedom, responsibility, individuality, and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber, and Marcel.

PHI 327 Ethical Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy including PHI 222 and one of PHI 211, 212, 213 or 214. A study of the problems of philosophical ethics, including relativism, egoism, utilitarianism, intrinsic value, and the meaning and justification of ethical principles. Both historical and contemporary thinkers will be considered.

PHI 331 Philosophy of Science. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits of philosophy and six credits of natural sciences courses. An examination of the bases of scientific inquiry in both the natural and social sciences; including a study of such topics as hypothesis formation and testing, and the nature of scientific laws, theories, and explanations.

PHI 335 Social and Political Philosophy. Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy including PHI 222 and one of PHI 211, 212, 213, 214 or POS 341 or 342. A critical examination of political power and of the relationship between the individual and his society. Possible topics include: anarchism and the justification of having a state at all; political views about what sort of state is justified (e.g., conservatism, liberalism, communitarianism, feminism, Marxism); private vs. collective property; market vs. planned economies; democracy vs. totalitarianism; and civil disobedience and revolution.

PHI 391 Topics in Philosophy. Semester course; variable; 1-4 credits. Prerequisite: As specified in the *Schedule of Classes* or permission of instructor. A study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the *Schedule of Classes* for specific topic to be offered each semester.

PHI 408/RST 408 Indian Tradition. Semester course; 3 lecture hours. 3 credits. Prerequisite: At least 6 credits in PHI or RST courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism, and contemporary development.

PHI 410/RST 410 The Chinese Tradition in Philosophy. Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty, and of neo-Confucianism. The systems of thought are examined in the light of their social, political, and religious impact on China, Korea, and Japan.

PHI 412/RST 412 Zen Buddhism. Semester course; 3 lecture hours. 3 credits. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present day Zen theory and practice in Japan and in Western countries.

PHI 421 Aesthetics. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHI 221 and PHI 222) or permission of instructor. A critical survey of philosophies of art

from antiquity to the twentieth century. Topics include: the nature of art, creativity, aesthetic experience, and aesthetic judgments.

PHI 430/RST 430 Philosophy of Religion. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 credits in philosophy (exclusive of PHI 221 and PHI 222) or permission of instructor. A critical analysis of such topics as the concept of God, arguments for the existence of God, the problem of evil, the concept of faith, religious language, and the conceptual problems posed by the plurality of religions.

PHI 440/RST 440 Mysticism. Semester course; 3 lecture hours. 3 credits. Prerequisite: One course in philosophy or religious studies. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology, and magic.

PHI 490 Seminar in Philosophy. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: One of PHI 301, 302, 303, 320, 327, 335 or permission of instructor in exceptional cases. Research and analysis of selected philosophical topic in a seminar setting.

PHI 492 Independent Study. Semester course; variable credit. Maximum of six credits per semester; maximum total of twelve credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. An independent study course to allow interested majors in philosophy to do research, under the direction of a professor qualified in that field, in an area of major interest.

PHI 496 Senior Research Project. Semester course; 1-4 credits. Prerequisites: Senior status; two of PHI 301, 302, 303, 327, 335, 391; and written approval by faculty supervisor. An individual research project to develop a polished journal-length research paper. This course is intended primarily for students who wish to develop a dossier paper for submission to a philosophy graduate program.

PHI 591 Topics in Philosophy. Semester course; variable; 1-4 credits. Prerequisite: Written permission of instructor or graduate standing. A graduate level, in-department study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See *Schedule of Classes* for specific topic to be offered each semester.

Courses in Religious Studies

RST 101 Introduction to Religious Studies. Semester course; 3 lecture hours. 3 credits. This course examines the phenomenon of religion and religious experience. Through a phenomenological approach definitions and descriptions of the major features of the religious experience and of religious establishments, including concepts of the sacred, the numinous, religious language, texts, symbols, rituals and myths are reviewed. In addition, the social, political and spiritual dimensions of religion in human culture will be investigated.

RST 250 Death: Myth and Reality. Semester course; 3 lecture hours. 3 credits. A study of intellectual and emotional responses to death and dying with emphasis upon their role in the development of religious thought and practice. Special attention will be paid to the death theme in literature, funeral practices, and beliefs concerning the afterlife in selected world religions.

RST 301 Introduction to the Old Testament. Semester course; 3 lecture hours. 3 credits. A survey of the Old Testament from its beginning through the post-Exile period. Emphasis given to the literary and historical development of the text.

RST 302 Introduction to the New Testament. Semester course; 3 lecture hours. 3 credits. A survey of the New Testament with particular emphasis given to the historical development of the Canon.

RST 303 Intertestamental Literature and Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: RST 301 or 302. The period between the Old and New Testaments as seen through the liter-

ature of the era, with emphasis on the writings of the Apocrypha, Pseudepigrapha, and Josephus.

RST 304 Introduction to Judaism. Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices, and beliefs.

RST 305 Hebrew Prophets. Semester course; 3 lecture hours. 3 credits. Prerequisite: RST 301. A survey of the literature and history of Israel as seen through the work of the writing prophets. Emphasis will be placed on the second part of the Hebrew Canon and the Book of Daniel.

RST 307/AAS 307 Black Religion. Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects, and cults.

RST 308/HIS 307 The High Middle Ages. Semester course; 3 lecture hours. 3 credits. A detailed historical analysis of the Gregorian Revolution, the Crusades, the twelfth century Renaissance, the Thomistic World, and the death of medieval civilization.

RST 309/HIS 309 The Reformation. Semester course; 3 lecture hours. 3 credits. A careful and intensive inquiry into the spiritual and material forces and people involved in the reformation of Christendom in sixteenth-century Europe.

RST 311, 312 Religions of the World. Semester course; 3 lecture hours. 3, 3 credits. An investigation of the historical, cultural, and theological foundations and development of major world religions. First semester: Hinduism, Buddhism, Confucianism, Taoism, and Shinto. Second semester: Zoroastrianism, Judaism, Christianity, and Islam.

RST 313 Life and Literature of Paul. Semester course; 3 lecture hours. 3 credits. Prerequisite: RST 302. A survey of the life and literature of Paul as given in Acts and the Epistles, involving special consideration of Paul's contribution to the expansion of Christianity.

RST 314 Jesus in the New Testament Tradition. Semester course; 3 lecture hours. 3 credits. A study of the Christ of faith and the Jesus of history as presented in New Testament literature and as interpreted in the works of selected scholars from the Church fathers to the present.

RST 315, 316/HIS 301, 302 The Ancient Near East. Semester course; 3 lecture hours. 3, 3 credits. A study of the ancient Near Eastern civilizations of Mesopotamia, Egypt, Anatolia, and Syria-Palestine, from the preliterary period to that of the Archaemenid Empire of the Persians. First semester: preliterary period to the end of Kassite rule in Babylonia (c.-1160 B.C.). Second semester: the rise and fall of the great Neo-Assyrian, Neo-Babylonian, Hebrew, and Persian Empires (c.-311 B.C.).

RST 317 Islam. Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the 7th century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, as well as mysticism (sufism) and law (shari'ah) as well as an overview of ritual practices, fundamental beliefs, theological principles, and current issues in Islam and international relationship.

RST 318, 319/HIS 325, 326 History of the Jewish People. Semester courses; 3 lecture hours. 3, 3 credits. A study of the Jewish people from the destruction of the Second Temple in A.D. 70 to the present. First semester: Judea in Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and the impact of the Emancipation. Second semester: the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and World Jewry.

RST 320 Taoism. Semester course; 3 lecture hours. 3 credits. A study of one of the most fundamental and influential philosophies of life in Chinese culture, focusing on the theory and practice of the basic principles of Taoism as formulated by the legendary Lao Tzu and further developed by Chuang Tzu.

RST 326/PHI 326 Existentialism. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of logic) or permission of instructor. An examination of the nature of truth, freedom, responsibility, individuality, and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber, and Marcel.

RST 327/HIS 327 History of Christianity. Semester course; 3 lecture hours. 3 credits. An historical and theological examination of Christianity from its origin to the present. Emphasis will be upon an understanding of leading events, ideas, movements, and persons in their historical settings.

RST 333/PSY 333 Psychology and Religious Experience. Semester course; 3 lecture hours. 3 credits. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health, and human values.

RST 334 Religion in Contemporary America. Semester course; 3 lecture hours. 3 credits. This course studies the history, literature, belief patterns and unique traits of religion in the United States. The evolution of religion and religious sentiment in a modern pluralistic, democratic society, including the varieties of religious experiences in contemporary America will be reviewed.

RST 335 The American Jewish Experience. Semester course; 3 lecture hours. 3 credits. The religious, social, and cultural structure of American Jewry from the colonial era to the present. Central themes examined are the social and religious characteristics of the American Jewish community, the tension between traditional Jewish values and the demands of the American environment, imported versus indigenous ideologies, regional and denominational variations.

RST 340 Global Ethics and the World's Religions. Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts towards a global ethic.

RST 350 World Classics of Spirituality. Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism, and other religious traditions.

RST 360/SOC 360 Sociology of Religion. Semester course; 3 lecture hours. 3 credits. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population.

RST 361/ENG 361 The Bible as Literature. Semester course; 3 lecture hours. 3 credits. Literary aspects of the Bible will be considered. Also attention will be given to the history of the English Bible.

RST 362 Shakespeare and Religion. Semester course; 3 lecture hours. 3 credits. An examination of the religious ideas in selected plays by William Shakespeare and their relevance to contemporary religious thought and experience. Topics include the nature of God, the meaning of life, the problem of evil, moral authority, and the question of immortality as found in Shakespeare's plays.

RST 407 Modern Jewish Thought. Semester course; 3 lecture hours. 3 credits. A study of the writings of the leading Jewish thinkers of the nineteenth and twentieth centuries. Special reference will be made to the issues arising from the encounter of Judaism with the modern world: the nature of revelation and the authority of the Torah, the nature of God, the impact of the Holocaust, the meaning of redemption, and the significance of the state of Israel.

RST 408/PHI 408 Indian Tradition. Semester course; 3 lecture hours. 3 credits. Prerequisite: At least 6 credits from PHI or RST courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka,

Jainism, Buddhism, the six systems of Hinduism, and contemporary developments.

RST 410/PHI 410 The Chinese Tradition in Philosophy. Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty, and of neo-Confucianism. The systems of thought are examined in the light of their social, political, and religious impact on China, Korea, and Japan.

RST 412/PHI 412 Zen Buddhism. Semester course; 3 lecture hours. 3 credits. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present day Zen theory and practice in Japan and in Western countries.

RST 430/PHI 430 Philosophy of Religion. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHI 211 and PHI 212) or permission of instructor. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality, and the basis of authority.

RST 431/MHT 431 Hymnology. Semester course; 3 lecture hours. 3 credits. A study of hymns and hymn tunes with emphasis on their development, style, and functions. Offered alternate years.

RST 435/MHT 435 Liturgics. Semester course; 3 lecture hours. 3 credits. A study of the forms of public worship emphasizing the orders in current usage. The planning of weekly and special services. Offered alternate years.

RST 490 Seminar in Religious Studies. Semester course; 3 lecture hours. 3 credits. Maximum of six credits. Prerequisite: 12 hours in RST courses. Research methods and bibliography in the field of religious studies; application of techniques and resources on research topics with classroom guidance and critique.

RST 491 Topics in Religious Studies. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Prerequisite: Written permission of instructor. An in-depth study of selected ideas or concepts, religious thinkers, or significant movements in the field of religion. See the *Schedule of Classes* for specific topic to be offered each semester.

RST 492 Independent Study. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. An independent study course to allow interested students in religious studies to do research in an area of major interest under the direction of a professor qualified in that field.

Department of Physics

Robert H. Gowdy

Associate Professor and Department Chair (1979) BS 1963 Worcester Polytechnic Institute; MS 1964 and PhD 1968 Yale University

Baski, Alison A.* (1996) *Assistant Professor of Physics and Electrical Engineering* BS 1987 University of Colorado; MS 1990 and PhD 1991 Stanford University

Bishop, Marilyn F. (1986) *Associate Professor* BA 1971, MA 1973 and PhD 1976 University of California, Irvine

Carlisle, John A.* (1996) *Assistant Professor of Physics and Electrical Engineering* BS 1986 and MS 1988 East Texas State University; PhD 1993 University of Illinois

Jena, Purusottam (1980) *Professor* BS 1964 and MS 1966 Utkal University; PhD 1970 University of California, Riverside

Khanna, Shiv N. (1984) *Professor* BS 1970, MS 1972 and PhD 1976 University of Delhi, India

Niculescu, Vasile A. (1978) *Associate Professor* BS 1963 and MS 1964 University of Cluj, Romania; PhD 1971 University of Bucharest, Romania

Rao, Bijan K.(1984) *Professor* BS 1961 and MS 1964 Utkal University, India;PhD 1971 University of California,Riverside

Emeriti Faculty

Satterthwaite, Cameron B. *Professor Emeritus* BA College of Wooster; PhD University of Pittsburgh
Smith,Elske v.P. *Professor Emerita* BS, MS and PhD Radcliffe College

* Joint Appointment

The Department of Physics offers the Bachelor of Science in Physics and the accelerated BS/MS physics program.

The curriculum in physics prepares students for technical careers in physics or in an allied area; for careers in engineering, through either the double major in physics and engineering or the pre-engineering program; and for the teaching of physics in secondary schools. The curriculum also prepares students for graduate studies in physics or in a related area, and for graduate studies of a profession in fields such as business, medical science, environmental science, law, or science writing.

Physics majors interested in teaching careers in elementary, middle, secondary, or special education can enter the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in physics and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Students interested in preparing for studies in engineering should refer to the School of Engineering.

The department also offers required and elective courses for students in other programs along with students majoring in physics.

Master of Science in Physics/Applied Physics. For information about this program see the *Graduate Bulletin*.

Degree Requirements

Bachelor of Science in Physics. The bachelor of science curriculum in physics requires a minimum of 120 credits, including **53 credits in physics and mathematics (39 credits in physics and 14 credits in mathematics OR 36 credits in physics and 17 credits in mathematics), as detailed in the course lists.**

To determine the biology course to fulfill the General Education natural sciences requirement, students should consult with their adviser in the College Advising Center or their physics adviser. CHE 101-102, L101-102 General Chemistry and Laboratories are highly recommended for all physics majors.

Along with the General Education requirements of the College of Humanities and Sciences and the Academic Campus requirements, students must take required courses and fulfill specific requirements for the degree as follows:

Required Physics Courses (30 credits total)		Credits
PHY 207	University Physics I	5
PHY 208	University Physics II	5
PHY 301	Classical Mechanics I	3
PHY 320	Modern Physics	3

PHY 320L	Modern Physics Lab	1
PHY 340	Statistical Mechanics and Thermodynamics	3
PHY 376	Electromagnetism	3
PHY 380	Quantum Physics I	3
PHY 450	Senior Physics Lab	3
PHY 490	Seminar in Conceptual Physics	1

Required Mathematics Courses (14 credits total)

MAT 200	Calculus I	4
MAT 201	Calculus II	4
MAT 301	Differential Equations	3
MAT 307	Multivariate Calculus	3

Elective Physics and Mathematics Courses (9 credits total, with a minimum of 6 PHY credits)

PHY 302	Classical Mechanics II	3
PHY 331	Electronics and Instrumentation I	3
PHY 407	Mechanics of Solid Materials	3
PHY 420	Quantum Physics II	3
PHY 422	Optics	3
PHY 432	Electronics and Instrumentation II	3
PHY 440	Introduction to Condensed Matter Physics	3
PHY 491	Topics in Physics	3
PHY 492	Independent Study	3
PHY 571	Theoretical Mechanics	3
PHY 576	Electromagnetic Theory	3
PHY 580	Quantum Mechanics	3
PHY 591	Topics in Physics	3
MAT 437	Applied Differential Equations	3
MAT 511	Applied Linear Algebra	3
MAT 512	Complex Analysis for Applications	3
MAT 515	Numerical Analysis	3
MAT 516	Numerical Analysis	3
MAT 517	Methods of Applied Mathematics	3
MAT 518	Methods of Applied Mathematics	3

Suggested Course Sequence for Bachelor of Science in Physics

Freshman Year (GenEd = General Education)	Credits
PHY 207 University Physics I	5
MAT 200 Calculus I	4
MAT 201 Calculus II	4
CHE 101 General Chemistry and Laboratory	5
CHE 102 General Chemistry and Laboratory	5
ENG 101 Composition (Level I GenEd)	3
Level II General Education requirements	4
	<hr/>
	30

Sophomore Year

PHY 208 University Physics II	5
PHY 320 Modern Physics	3
PHY 320L Modern Physics Lab	1
PHY 301 Classical Mechanics I	3
MAT 301 Differential Equations	3
MAT 307 Multivariate Calculus	3
BIO 101 Life Science (Level II GenEd)	3
ENG 200 Composition (Level I GenEd)	3
Level II General Education requirements	6
	<hr/>
	30

Junior Year

PHY 340 Statistical Mechanics	3
PHY 376 Electromagnetism	3
PHY 380 Quantum Physics I	3
Physics/Math Elective	3
Writing Intensive course (Level I GenEd)	3
Level II General Education requirements	12
Electives	3
	<hr/>
	30

Senior Year

PHY 450 Senior Physics Laboratory	3
PHY 490 Seminar in Conceptual Physics	1

Physics/Math Electives	6
Level II General Education requirements	13
Electives	7
	30

Those students intending to pursue graduate studies in physics should take PHY 302, 420, 440, 571, 576 and/or 580. Those interested in experimental physics should also take one or more credits in PHY 397 or 492.

Double Major (BS) in Engineering and Physics

A detailed description of this program can be found in the School of Engineering section of this *Bulletin*.

Minor in Physics

A minor in Physics shall consist of 20 credits made up of PHY 207-208, PHY 320, PHY L320 and 6 credits of physics electives that are applicable to the physics major. Engineering courses that are listed as acceptable substitutes in the physics/engineering double major, described in the School of Engineering section of this *Bulletin*, are also acceptable substitutes in the minor.

Accelerated BS/MS Physics Program

Students enrolled in the Physics BS Program may elect to take graduate courses that may count toward the MS degree. Up to 6 hours of graduate credit may be earned without any special provisions; however, to offer more than 6 credits of pre-admission graduate credits toward the MS degree, the student must apply for admission to the accelerated BS/MS program through the Physics Department Graduate Admissions Committee in the junior year, indicating (1) a curriculum plan for completing the physics BS degree within two years or its part-time equivalency and (2) which graduate courses the student intends to offer toward the physics MS degree. Those applying for this accelerated program should have a "B" average or better. Admission to the accelerated program does not imply admission to the graduate program. Application for graduate admission must be made when a student applies for the BS degree.

Courses in Physics

PHY 101 Foundations of Physics. Semester course; 3 lecture hours. 3 credits. Offered each semester. Introduction to the fundamental ideas of physics. The course covers selected topics in mechanics, heat, optics, electricity and magnetism, and modern physics. For non-science majors. Not applicable toward the physics major. An optional laboratory may be taken with this course. See PHY L101.

PHY L101 Foundations of Physics Laboratory. Semester course; 2 laboratory hours. 1 credit. Corequisite: PHY 101. An optional laboratory consisting of experiments and activities correlated with PHY 101.

PHY 103 Elementary Astronomy. Semester course; 3 lecture hours. 3 credits. A descriptive approach to astronomy dealing with basic features of our solar system, our galaxy, and the universe. Not applicable toward physics major requirements. An optional laboratory may be taken with this course. See PHY L103.

PHY L103 Elementary Astronomy Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: PHY 103. An optional

laboratory course consisting of experiments and activities related to PHY 103.

PHY 105 Physical Geology. Semester course; 3 lecture hours. 3 credits. A descriptive approach to physical geology dealing with the history and structure of the earth, catastrophic events, and geology as it relates to the contemporary environment. Not applicable toward physics major requirements. An optional laboratory may be taken with this course. See PHY L105.

PHY L105 Physical Geology Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: PHY 105. An optional laboratory course consisting of experiments and activities related to PHY 105.

PHY 107 Wonders of Technology. Semester course; 5 lecture/laboratory/recitation hours. 4 credits. Introduction to physics concepts involved in everyday technological applications. The course covers selected topics in mechanics, heat, optics, electricity, and magnetism, and modern physics by depicting their role in common devices. The laboratory focuses on applications of physics principles to everyday real-life situations. Not applicable toward the physics major.

PHY 201-202 General Physics. Continuous course; 3 lecture and 3 laboratory hours. 4-4 credits. Prerequisite: MAT 151. First semester: basic concepts of motion, waves, and heat. Second semester: basic concepts of electricity, magnetism, light, and modern physics. Designed primarily for life-science majors. Not applicable toward physics major requirement.

PHY 207 University Physics I. Continuous course; 4 lecture and 3 laboratory hours. 5 credits. Corequisite: MAT 200. A vector- and calculus-based introduction to the fundamental concepts of mechanics, heat, and wave motion.

PHY 208 University Physics II. Continuous course; 4 lecture and 3 laboratory hours. 5 credits. Prerequisite: PHY 207. Corequisite: MAT 201. A vector- and calculus-based introduction to the fundamentals of electricity, magnetism, and optics.

PHY 291 Topics in Physical Science. Semester course; 1-3 lecture or laboratory hours. Variable (1-3) credits per semester. Not applicable toward physics major requirements. A study of a selected topic in physics, astronomy, geology, meteorology, or oceanography. See the *Schedule of Classes* for specific topic(s) and possible prerequisites.

PHY 301 Classical Mechanics I. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHY 208 and MAT 301. Corequisite: MAT 307. Review of vector calculus. Newtonian mechanics: single particle, oscillations, motion under central forces, dynamics of a systems of particles.

PHY 302 Classical Mechanics II. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHY 301 and MAT 307. Motion in noninertial frames, dynamics of rigid bodies, coupled oscillators, continuous systems, wave equations in one dimension.

PHY 315/ENS 315 Energy and the Environment. Semester course; 3 lecture hours. 3 credits. Open to non-physics majors; not applicable to the physics major. Prerequisite: junior or senior standing. A study of society's demands for energy, how it is currently being met, the environmental consequences thereof, and some discussion of alternatives.

PHY 320 Modern Physics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 208 and MAT 301. Corequisite: MAT 307. Foundations of modern physics including special relativity, thermal radiation and quantization, wave-particle duality of radiation and matter. Schrodinger equation. Introduction to Atomic, Nuclear and Particle Physics. Molecular structure and spectra. A continuation of PHY 208.

PHY L320 Modern Physics Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: PHY 320. Experimental work correlated with PHY 320.

PHY 331 Electronics and Instrumentation for Scientists I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: PHY 208 or permission of instructor. Simple AC and DC

circuit. Passive and active circuit elements including semiconductor devices, discrete and integrated linear circuits.

PHY 340 Statistical Mechanics and Thermodynamics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 301 and MAT 307. Microscopic theory of temperature, heat and entropy, kinetic theory, multicomponent systems, quantum statistics. Mathematical relationships of thermodynamics.

PHY 376 Electromagnetism. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHY 301 and MAT 307. Electrostatics, magnetism, and electromagnetic properties of matter, Maxwell's equations, electromagnetic waves, boundary conditions, polarization.

PHY 380 Quantum Physics I. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 320 and MAT 307 or permission of instructor. Brief introduction to the correspondence between classical and quantum mechanics. Schrodinger wave equation, operator methods in quantum mechanics, angular momentum and conservation laws, solution to harmonic oscillator and the hydrogen atom, magnetic dipole momentum and spin.

PHY 391 Topics in Physics. Semester course; 1-3 lecture hours. Variable; 1-3 credits per semester. Maximum total of six credits. Not applicable toward physics major requirement. In-depth study of a selected topic in physics or physics-related technology, usually at a level requiring only elementary algebra. See the *Schedule of Classes* for specific topic(s), credit, and possible prerequisites.

PHY 397 Directed Study. Semester course; variable; 1-3 credits per semester. Maximum of three credits applicable toward physics major requirement; maximum total of four credits. Open to nonmajors. Determination of amount of credit and permission of instructor must be obtained before registration for course. Intended to allow nonmajors and majors to examine in detail an area of physics or physics-related technology not otherwise available in upper-level courses. May involve either directed readings or directed laboratory work.

PHY 407 Mechanics of Solid Materials. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 302 and MAT 307 or permission of instructor. Analysis of stress and strain, constitutive equations, effect of time and temperatures on mechanical behavior and failure of solid materials; introduction to composite materials; emphasis on engineering applications.

PHY 420 Quantum Physics II. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 380 or permission of instructor. Transition rates, addition of angular momentum, multi-electron atoms-Ground state, x-ray and optical excitations, time independent perturbation theory, relativistic hydrogen atom and the structure of atoms, collision theory, nuclear structure, elementary particles and their symmetries.

PHY 422 Optics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 376 or permission of instructor. Comprehensive study of propagation of light, including geometrical optics, polarization, interference, diffraction, Fourier optics and quantum optics.

PHY 432 Electronics and Instrumentation for Scientists II. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite PHY 331 or permission of instructor. Discrete and integrated digital circuits; basic microprocessor architecture, machine and assembly language for input/output configuration; electronic instrumentation for control and measurement.

PHY 440 Introduction to Condensed Matter Physics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 376 and PHY 380. Structure and bonding in solids, phonons, free electron Fermi gas, energy bands, semiconductors, Fermi surface and optical properties. Magnetism.

PHY 450 Senior Physics Laboratory. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: PHY L320, PHY 376, and PHY 380. Corequisite: PHY 420. Experiments in atomic, condensed matter, nuclear, particle, and plasma physics. Introduction to instrumentation and first experience in the research laboratory.

PHY 490 Seminar in Conceptual Physics. Semester course; 1 lecture and 1 recitation hour. 1 credit. Prerequisites: PHY 376 and PHY 420. Attend weekly physics colloquia, practice oral presentation of ideas and problems. Assessment of general physics background.

PHY 491 Topics in Physics. Semester course; 3 lecture hours. 3 credits. Maximum of three credits applicable toward physics major requirement; maximum total of six credits. An in-depth study of a selected topic in physics. See the *Schedule of Classes* for specific topic(s) and prerequisites.

PHY 492 Independent Study. Semester course; variable; 1-3 credits per semester. Maximum of three credits applicable toward physics major requirement; maximum total of eight credits. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. Independent projects in experimental or theoretical physics.

PHY 571 Theoretical Mechanics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 301 and MAT 301 or permission of instructor. An introduction to advanced dynamics involving the Lagrangian and Hamiltonian formalisms.

PHY 576 Electromagnetic Theory. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 376 and MAT 301 or permission of instructor. Maxwell's equations of electromagnetism, vector and scalar potentials, electromagnetic waves, and radiation theory.

PHY 580 Quantum Mechanics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 380, MAT 307, or permission of instructor. Theoretical quantum descriptions with emphasis upon mathematical techniques. Schrodinger equation, hydrogen atom, eigenfunctions and eigenvalues, angular momentum and spin, and perturbation theory.

PHY 591 Topics in Physics. Semester course; 3 lecture hours. Variable; 1-3 credits. Open to graduate students and to undergraduate students with advanced standing. Applicable toward physics major requirements. An in-depth study of a selected topic in advanced physics. See *Schedule of Classes* for specific topic(s) and additional prerequisites.

Department of Political Science and Public Administration

Nelson Wikstrom

Professor and Department Chair (1971) BA 1963 Northeastern University; MA 1965 and PhD 1969 University of Connecticut

Ralph S. Hambrick

Professor and Director, Graduate Public Administration Programs (1978) BA 1965 Dartmouth College; PhD 1971 Syracuse University

Alimard, Amin (1982) *Collateral Associate Professor* BA and DPA 1961 University of Southern California

Banks, Manley Elliott (1987) *Associate Professor* BA 1975 Morehouse College; MA 1985 and PhD 1987 University of Texas

Condit, Deirdre M. (1994) *Assistant Professor of Political Science and Public Administration and Women's Studies* BA 1982 Idaho State University; MA 1991 and PhD 1995 Rutgers University

Dolan, Julie A. (1998) *Assistant Professor* BA 1990 St. Olaf College; PhD 1997 American University

Drake, W. Avon (1986) *Associate Professor* BS 1969 North Carolina A&T University; MPS 1973 and PhD 1985 Cornell University

Farmer, David J. (1980) *Professor* BS London School of Economics and Political Science; DPA 1980 Nova University; PhD 1984 University of London; MA 1986 and PhD 1989 University of Virginia

Grosenick, Leigh E. (1975) *Professor* BA 1960, MA 1965 and PhD 1968 University of Minnesota

Hirsch, Herbert (1981) *Professor* BA 1963 Concord College; MA 1965 Villanova University; PhD 1968 University of Kentucky

Holsworth, Robert (1978) *Professor and Director, Center for Public Policy* BA 1972 Seton Hall University; PhD 1978 University of North Carolina, Chapel Hill

Hutchinson, Janet R. (1993) *Assistant Professor* BS 1978 University of Maryland; MPA 1985 American University; PhD 1992 University of Pittsburgh

Jackson, M. Njeri* (1990) *Associate Professor of Political Science and Public Administration and Director, African-American Studies Program* BA 1976 Georgia State University; MA 1982 and PhD 1987 Atlanta University

Mustafa, Husain M. (1975) *Professor* LLB University of Baghdad; MS Ohio State University; PhD 1963 American University

Newmann, William W. (1994) *Instructor* BA 1983 University of Pennsylvania; MA 1985 Drew University

Twigg, Judyth L. (1992) *Assistant Professor* BS 1984 Carnegie Mellon University; MA 1986 University of Pittsburgh; PhD 1994 Massachusetts Institute of Technology

Wooldridge, Blue E. (1987) *Associate Professor* BS Berea College; MGA 1968 University of Pennsylvania; MPA 1973 and DPA 1993 University of Southern California

Emeriti Faculty

Belloni, Frank P. *Associate Professor Emeritus* BA University of California at Riverside; MA University of Iowa; PhD University of California at Los Angeles

Fairholm, Gilbert W. *Associate Professor Emeritus* BS Brigham Young University; MGA 1960 University of Pennsylvania; DPA 1970 State University of New York

Heiss, F. William *Professor Emeritus* BS University of Denver; MAPA and PhD University of Colorado

Henry, Laurin L. *Professor Emeritus* BA DePauw University; MA and PhD University of Chicago

Warmenhoven, Henri J. *Associate Professor Emeritus* LLB and LLM University of Leyden; MA and PhD University of Melbourne, Australia

Affiliate Faculty

Donald C. J. Gehring
L. Douglas Wilder

Lynn D. Nelson

The political science and public administration curriculum has two central objectives.

It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process.

It also provides a sound foundation for graduate study in political science or for careers which require a knowledge of governance and the political process.

The Department of Political Science and Public Administration offers a Bachelor of Arts in Political Science.

Additionally, the department offers elective courses in political science for program majors and nonmajors, alike.

Degree Requirements

Bachelor of Arts in Political Science. The bachelor of arts curriculum in political science requires a minimum of 120 credits, with at least 33 of those credits in political science.

Along with the general education requirements of the College of Humanities and Sciences and Academic Campus requirements, the student majoring in political science must take POS 103 U.S. Government, POS 105 International Relations, and POS 201 Introduction to Politics.

Political science majors are also required to take one course in each of the following areas:

1. Comparative Politics (POS 350,351,352,353,354,355,356,357,365, and 468);
2. International Relations (POS 361,362,363,364, 365, and 452);

3. Political Theory and Methodology (POS 320, 341, 342, 343, 344, and 448);
4. U.S. Politics (POS 301, 302, 303, 306, 308, 310, 311, 314, 315, 316, 318, 321, 322, 323, 329, 331,409, 420, and 432). Topics courses cannot be used to satisfy these distribution requirements.

Political science majors are **strongly encouraged** to take STA 210 Basic Practice of Statistics to fulfill the Humanities and Sciences General Education statistics requirement. In addition, political science majors are **strongly encouraged** to complete POS/SOC 205 Introduction to Social Science Computing and POS/SOC 320 Research Methods in the Social Sciences. With prior approval of the departmental curriculum committee, students can take three credits toward the political science major from courses offered by other departments. Students may count a maximum of 6 credits of internship and 3 credits of independent study toward the major.

Collateral Requirements

In addition to the POS courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

Honors in Political Science

Political science majors can earn honors in political science. To enter this program, students must have an overall 3.0 GPA and at least a 3.3 GPA in political science.

Students must also have completed at least 18 credits in political science before their senior year, with at least 12 of these credits taken at VCU.

Application to this program must be made in the second semester of the junior year.

Students earn the honors status when they complete both POS 498 Political Science Honors, and POS 499 Political Science Honors Project, with at least a "B" grade; and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

Minor in Political Science

The minor in political science consists of 18 credits, including POS 103 U.S. Government, POS 105 International Relations, POS 201 Introduction to Politics, and at least nine credits in upper-level (300-400) political science courses. These upper-level courses must be selected in consultation with a political science adviser. POS 492 Independent Study and POS 493-494 Internships cannot be used to fulfill these nine upper-level credits.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in political science. A full description of the program appears in Part XX of this *Bulletin*.

Concentration in Public Management

Majors in this concentration should take POS 331 Public Administration, and POS 432 Public Bureaucracy,

as part of the 33 credits required for the political science major.

To complete the concentration, students should take USP 413 Policy Implementation, and USP 322 Urban Finance, beyond the required credits for the major.

Minor in Public Management

The public management minor consists of 18 upper-level credits. All students must take POS 331 Public Administration; POS 432 Public Bureaucracy; USP 413 Policy Implementation; and USP 322 Urban Finance.

The minor also requires taking any two of the following electives: POS 329 Intergovernmental Relations; POS 334 Public Personnel Administration; USP 541 Urban Public Policy-Making Processes (taken by POS majors), or POS 321 Urban Government and Politics (taken by USP majors).

Courses in Political Science

POS 103 U.S. Government. Semester course; 3 lecture hours. 3 credits. A study of American national government focusing on its underlying political ideas, constitutional basis, major institutions, and their interaction in the determination of public policy.

POS 105/INT 105 International Relations. Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior, and other selected issues as appropriate.

POS 201 Introduction to Politics. Semester course; 3 lecture hours. 3 credits. This course examines the basic concepts involved in the study of politics. Topics include nature of the state, purpose of government, justice, power, etc.

POS 205/SOC 205 Introduction to Social Science Computing. Five-week course; 4 lecture/laboratory hours. 1 credit. An introduction to the use of SPSS for storage, retrieval and exploration of social science data. Required of all Sociology and Anthropology majors concentrating in sociology.

POS 301 U.S. Parties and Elections. Semester course; 3 lecture hours. 3 credits. An overview of political parties and elections in the U.S. Topics will include the history, organization, and methods of U.S. political parties, presidential nominations and elections; Congressional elections.

POS 302/AAS 302 Politics of the Civil Right Movement. Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America.

POS 303 Political Attitudes and Behavior. Semester course; 3 lecture hours. 3 credits. Study of the political behavior of individual citizens. Topics include public opinion and its measurement; how political attitudes are created and shaped; the role of the news media in influencing political behavior; political participation.

POS 306 The Congress. Semester course; 3 lecture hours. 3 credits. A study of the behavior of legislators and the structures and processes of legislative decision making in the U.S. Congress. Analysis will include both the internal and external environment of congressional policy making, and an assessment of the impact of congressional policy.

POS 308 U.S. Presidency. Semester course; 3 lecture hours. 3 credits. A political and institutional study of the chief executive, focusing especially on the presidential personality, his relations with Congress, the bureaucracy, the courts, and the shaping of domestic and foreign policy.

POS 310 Public Policy. Semester course; 3 lecture hours. 3 credits. An analytical survey of policy formulation and implementation in the United States, together with an examination of the impact of policy upon individuals and groups in American society.

POS 311/ENS 311 Politics of the Environment. Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crisis it centers on. Special attention will be given to the constitutional, political, and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes.

POS 314 U.S. Constitutional Law. Semester course; 3 lecture hours. 3 credits. A survey of the development of the Constitution through judicial interpretation. Topics to be covered include an introduction to the operation of the Supreme Court, decisions on federalism, the powers of Congress, the president, and the judiciary and civil rights, and civil liberties.

POS 315 U.S. Judicial Policy Making. Semester course; 3 lecture hours. 3 credits. Prerequisite: POS 314. A study of theories and models of judicial decision making in the Supreme Court, focusing on judicial structure and procedures, policy-making analysis, political ideology, and judicial activism.

POS 316/WST 316 Women and the Law. Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics, and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights, women criminals, and women in the legal profession.

POS 318/AAS 318/WST 318 Politics of Race, Class and Gender. Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States.

POS 320/SOC 320 Research Methods in the Social Sciences. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: SOC/POS 205 or equivalent. Current methods of research in the social sciences.

POS 321 Urban Government and Politics. Semester course; 3 lecture hours. 3 credits. An examination of urban political power and influence, governance, and public policy. Topics include: power and influence, governmental structures and the political process, public policy, and service delivery.

POS 322 State and Local Government and Politics. Semester course; 3 lecture hours. 3 credits. An examination of the politics and governance of states and localities. Attention is devoted to political culture, interest groups, political parties, the legislative, executive, and judicial components of state government, along with the structure and political processes of local governments.

POS 323 Virginia Government and Politics. Semester course; 3 lecture hours. 3 credits. An examination of Virginia state government and politics, with appropriate attention given to political culture, interest groups, political parties, the media, and the legislative, executive, and judicial branches of government.

POS 329 Intergovernmental Relations. Semester course; 3 lecture hours. 3 credits. An examination of vertical and horizontal intergovernmental relations. Attention will be given to the major variants of federalism. The role of categorical and block grants in programmatic federalism will be assessed. Trends in intergovernmental relations will be advanced.

POS 331 Public Administration. Semester course; 3 lecture hours. 3 credits. A study of the concepts and practices of public administration in the United States. Particular attention will be given to the administrative procedures and practices of the national government and of the government in Virginia.

POS 334 Public Personnel Administration. Semester course; 3 lecture hours. 3 credits. An analysis of personnel management in

government. Recruitment and selection, job and salary classification, work standards and training, and relations of public personnel to the executive and legislative branches of government will be among the topics to be discussed.

POS 341/342 History of Political Thought. Semester course; 3 lecture hours. 3-3 credits. A survey of political thought from the time of Plato to the present. First semester: leading political ideas of the ancient and medieval periods. Second semester: modern and contemporary thought.

POS 343/AAS 343 Black Political Thought. Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present.

POS 344 Contemporary Political Theory. Semester course; 3 lecture hours. 3 credits. This course provides a survey of recent trends in political theory. It examines updates of the major ideological traditions, arguments about the nature of modernity and recent developments in environment, feminist, and non-Western thought.

POS 351/INT 351 Governments and Politics of the Middle East. Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects of traditionalism, the political nature of transition, the instruments of political modernization, and evolution and revolution in the political process of Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the principal forces that shape the policies and political dynamics of the region.

POS 352/INT 352 European Governments and Politics. Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries.

POS 353/INT 353 Latin American Governments and Politics. Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism, and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges.

POS 354/INT 354 Politics of the Former Soviet Union. Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, and processes, and disintegration of the Soviet political system, and the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems, and foreign policy.

POS 355/INT 355 Asian Governments and Politics. Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China, and India.

POS 356/AAS 356/INT 356 Government and Politics of Africa. Semester course; 3 lecture hours. 3 credits. This course will introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization strategies. Using the comparative approach, the course will primarily focus on West, East, and Central Africa.

POS 357/AAS 357/INT 357 Politics of Southern Africa. Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

POS 358/INT 358 Comparative Politics. Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development.

POS 361/INT 361 Issues in World Politics. Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in

world politics. Topics may include peacekeeping and collective security, international economic competitiveness, global environmental politics, as well as selected others. Topics will vary with current events and trends in the international arena.

POS 362/INT 362 International Organizations and Institutions. Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community, the Organization of American States.

POS 363/INT 363 U.S. Foreign Policy. Semester course; 3 lecture hours. 3 credits. An analytical survey of processes and practices in the formulation of United States foreign policy including an introduction to the goals, problems of implementation, and current challenges faced by policy makers.

POS 364/INT 364 Vietnam. Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of United States involvement. The course will examine closely how and why the U.S. became involved in Vietnam and what impact the Vietnam war has had on political institutions and behavior. In particular, the course will examine what impact the period of U.S. involvement has had upon U.S. foreign policy. The course will also consider additional topics including: public opinion and the war, the relationship between President and Congress in light of the war, and contemporary U.S. politics as a backlash against the political movements of the 1960s.

POS 365/INT 365 International Political Economy. 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory, and others. Policy issues include differing styles of capitalism in the industrialized world, the political economy of development, the politics of international corporate alliances, and others.

POS 391 Topics in Political Science. Semester course; 3 lecture hours. 3 credits. Maximum total of nine credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the *Schedule of Classes* for specific topics to be offered each semester.

POS 409 Continuity and Change in American Politics. Semester course; 3 lecture hours. 3 credits. Prerequisite: POS 103 or permission of instructor. This course is concerned with the role of cultural, economic, and social variables in shaping American politics and public policy. Particular attention will be devoted to the impact of socioeconomic change upon individual and group behavior, and the structures and processes of American national government.

POS 420 Seminar in Urban Politics. Semester course; 3 lecture hours. 3 credits. Attention will be devoted to concerns bearing on community power and influence, the dynamics of the urban political process, the nature of urban public policy, and metropolitan governmental structure.

POS 425 Public Policy in the States. Semester course; 3 lecture hours. 3 credits. The course focuses primarily upon the policy outcomes of state political systems rather than upon institutional processes. Social, economic, political, and governmental structures and their relationship to state policy are analyzed; means of policy evaluation are considered; and the insights developed are applied to substantive areas of state policy.

POS 432 Public Bureaucracy. Semester course; 3 lecture hours. 3 credits. Prerequisite: POS 331. An analysis of the nature of bureaucracy and bureaucratic phenomena in American governments; the role and involvement of the bureaucracy in politics and the policy-making process. Primary focus on theories and approaches to understanding the central role of bureaucracy in modern society and its use and abuse of power.

POS 448 Scope and Method of Political Science. Semester course; 3 lecture hours. 3 credits. Prerequisites: POS 103 and 201, or permission of instructor. A comprehensive and systematic study of the philos-

ophy of political science, various theories seeking to explain political phenomena, and some of the techniques of political analysis.

POS 452/INT 452 Seminar in the Politics of Developing Areas. Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution, and civil war.

POS 468/INT 468 Seminar on Comparative Foreign Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: POS 201 or permission of instructor. A study of theories, models, and hypotheses of foreign policy behavior in various types of political systems with emphasis on empirical research and analysis of differences and similarities.

POS 491 Topics in Political Science. Semester course; 3 lecture hours. 3 credits. Maximum total of nine credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the *Schedule of Classes* for specific topics to be offered each semester.

POS 492 Independent Study. Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in political science. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. An independent study course which allows a political science major or other student who meets the requirement to do research, under the direction of an instructor qualified in that area, in a subject or field of major interest.

POS 493/USP 493 Urban Government Internship. Semester course; 150 clock hours in a local legislative body or administrative agency. 3 credits. May be repeated once for a maximum of six credits or 300 clock hours. Approval of selection committee required. Under supervision of a faculty committee and a field supervisor, the internship is designed to present opportunities for qualified students to acquire exposure to aspects of public decision-making processes by participation in (1) local legislative bodies of the Richmond metropolitan area; (2) local and regional administrative agencies and commissions; and (3) private organizations that have demonstrated interest in local government and politics.

POS 494 Political Science Internship. Semester course; 3 credits. May be repeated once for a maximum of 6 credits. Designed to provide the student with an opportunity to relate theory to practice through observation and actual experience in the legislative, executive, or judicial branches of government, or in interest groups or political party organizations.

POS 498 Political Science Honors. Semester course; 3 lecture hours. 3 credits. Prerequisite: Admission to the Honors in Political Science Program or permission of the political science honors coordinator. This course will focus primarily on various approaches to the study of politics and will draw together the diverse strands of political science that are the most representative, coherent, and lively in the field. Its purpose is to acquaint the students with various conceptual frameworks for the study of politics or to develop their understanding of the state of the discipline.

POS 499 Political Science Honors Project. Semester course; 3 lecture hours. 3 credits. Prerequisite: Successful completion of POS 498 with a "B" grade or above. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in political analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of the Honors coordinator.

Department of Psychology

Steven B. Robbins

Professor and Chair (1983) BA 1975 University of Illinois; MS 1980 and PhD 1983 University of Utah

Mark F. Stasson

Associate Professor of Psychology and Director of Undergraduate Studies (1989) BS 1984 University of Wisconsin; MA 1987 and PhD 1989 University of Illinois

- Allison, Kevin Wendell (1996) *Associate Professor* BA 1981 University of Notre Dame; MA 1985 and PhD 1989 DePaul University
- Auerbach, Stephen M. (1974) *Professor* BA 1965 City University of New York, Queens College; MS 1969 and PhD 1971 Florida State University
- Bailey, Kent G. (1963) *Professor* BA Emory and Henry College; MS Virginia Commonwealth University; PhD 1968 West Virginia University
- Belgrave, Faye Z. (1997) *Professor* BS 1972 North Carolina A & T State University; MA 1974 University of Nebraska; PhD 1982 University of Maryland
- Danish, Steven J. (1985) *Professor* BA 1963 Bucknell University; MS 1964 Springfield College; PhD 1969 Michigan State University
- Eissenberg, Thomas E. (1997) *Assistant Professor* BA 1987 Grinnell College; PhD 1994 McMaster University, Ontario
- Erickson, Marilyn T. (1976) *Professor* AB 1957 and MA 1959 Brown University; PhD 1961 University of Washington
- Farrell, Albert D. (1980) *Professor* BS 1975 Michigan State University; MS 1977 and PhD 1980 Purdue University
- Forsyth, Donelson R. (1978) *Professor* BS 1974 Florida State University; MA 1975 and PhD 1978 University of Florida
- Fries, Elizabeth A. (1994) *Assistant Professor* BA 1985 University of Colorado; PhD 1992 University of Washington
- Gramling, Sandra E. (1986) *Associate Professor* BA 1980 St. Mary's College of Maryland; MA 1983 and PhD 1986 University of Mississippi
- Hamm, Robert J. (1974) *Professor* BA 1968 Kent State University; MA 1972 and PhD 1974 Southern Illinois University, Carbondale
- Hanna, Aura (1992) *Assistant Professor* BS 1983 University of Toronto; MS 1985 and PhD 1989 University of Washington
- Hartnett, John J. (1968) *Associate Professor* BA University of Vermont; MS University of North Carolina; PhD 1968 Wayne State University
- Holmes, Clarissa S. (1999) *Professor* BS 1974 East Carolina University; MA 1977 and PhD 1979 University of Arkansas
- Howard, Catherine W. (1988) *Collateral Associate Professor and Director, Office of Community Programs* BA 1979 Davidson College; MS 1982 University of Maryland; PhD 1988 Pennsylvania State University
- Ingram, Kathleen M. (1995) *Assistant Professor* BA 1981 College of the Holy Cross; JD 1984, MA 1991 and PhD 1995 Ohio State University
- Kiesler, Donald J. (1973) *Professor* AB 1958 Bellarmine College; PhD 1963 University of Illinois
- Kliwer, Wendy L. (1992) *Assistant Professor* BA 1980 Southern California College; MS 1983 Portland State University; PhD 1989 University of California, Irvine
- Leahey, Thomas H. (1974) *Professor* BA George Washington University; MA and PhD 1974 University of Illinois, Urbana-Champaign
- Mahoney, John M. (1971) *Associate Professor* BS Michigan State University; PhD 1971 State University of New York, Buffalo
- McCreary, Micah L. (1993) *Assistant Professor* BS 1981 University of Michigan; MDiv 1986 Virginia Union University; MS 1990 and PhD 1993 Virginia Commonwealth University; CAGS 1993 Howard University
- McCullough, James P., Jr. (1972) *Professor and Director, Unipolar Mood Disorders Institute* BA 1958 Louisiana State University; BD 1961 Southern Methodist University; MS 1967 and PhD 1970 University of Georgia
- Meyer, Aleta L. (1994) *Assistant Professor* BS 1986 University of Tennessee; MS 1991 and PhD 1994 Pennsylvania State University
- Myers, Barbara J. (1979) *Associate Professor* AB 1972 Earlham College; MA 1974 University of Maryland; PhD 1981 Temple University
- Porter, Joseph H. (1975) *Professor* BS 1971, MS 1972 and PhD 1974 University of Georgia
- Shivy, Victoria (1997) *Assistant Professor* BS 1986 University of Scranton; PhD 1994 University of Albany/State University of New York
- Stolberg, Arnold L. (1979) *Professor* BA 1973 University of Rochester; MA 1976 and PhD 1979 University of South Florida
- Strong, Stanley R. (1980) *Professor* BA Montana State University; PhD 1966 University of Minnesota
- Vitanza, Stephanie A. (1996) *Instructor* BS 1987 Texas A & M University; MS 1991 and PhD 1995 University of North Texas

Wilkes, Susan B. (1994) *Collateral Assistant Professor* BA 1981 and MEd 1984 University of Virginia; PhD 1992 Virginia Commonwealth University

Williams, Julie Elizabeth (1993) *Collateral Assistant Professor and Director, Center for Psychological Services and Development* BA 1979 College of William & Mary; PhD 1986 University of Tennessee

Worthington, Everett L. (1978) *Professor* BSNE University of Tennessee; MSNE Massachusetts Institute of Technology; MA and PhD 1978 University of Missouri

Emeriti Faculty

Groman, William D. *Professor Emeritus* BA and MS University of Miami, Florida; PhD Duke University

Tipton, Robert M. *Professor Emeritus* BS and MS Virginia Commonwealth University; PhD University of Missouri

The curriculum in psychology reflects the discipline's three major orientations – a science, teaching and incorporating empirical methods; a healing profession; and a philosophy, raising basic questions about the assumptions, values, and ideals of human beings and their societies.

The bachelor of science curriculum gives students a comprehensive appreciation of psychology as a science. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry – particularly about human behavior. Courses selected from the curriculum's four content areas, as well as some of the core requirements, expose students to the healing and philosophical sides of psychology and provide a broad understanding of the field of psychology. Students who graduate from this program achieve the necessary preparation for graduate study, and possess the professional skills and knowledge for employment within the field.

Psychology majors interested in teaching careers in early, middle, secondary, or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in psychology and a master's degree in teaching. For more information about this program administered jointly by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Master of Science and Doctor of Philosophy Programs in Psychology. For information about graduate work in psychology, see the *Graduate Bulletin*.

Degree Requirements

Students should carefully review the humanities and sciences general requirements. The BS curriculum in psychology was developed in the context of these general requirements. It is the student's responsibility to know the specific requirements of both the College of Humanities and Sciences and the Department of Psychology. It is also the student's obligation to plan a meaningful program of study, and to consult regularly with advisers in the Psychology Career Information and Advising Center.

Bachelor of Science in Psychology. The bachelor of science curriculum in psychology requires a minimum of 120 credits, with at least 30 of those credits in psychology. However, no more than 36 credits in psychology can be presented for graduation for the Bachelor of Science degree. This limit does not apply to courses numbered 490 and above.

At least 15 of the 30 required credits must be taken at VCU, and the student must earn a "C" or better in PSY 101, STA 210, PSY 214, and PSY 317.

The BS psychology major must take five core courses in the discipline and four additional courses chosen from a selection of offerings in four content areas.

To complete the minimum requirement of 30 credits for the program, students must complete one free elective selected from any of the department's courses, excluding PSY 201, which may, however, be counted beyond the required 30 credits.

The following five courses constitute the required core in the BS curriculum:

PSY 101 Introduction to Psychology
 PSY 214 Applications of Statistics
 PSY 317 Experimental Methods
 PSY 318 Principles of Psychological Tests and Measurement
 PSY 451 History and Systems of Psychology

The student must choose one course from each of the following four content areas:

Developmental

PSY 301 Child Psychology OR PSY 304 Life Span Developmental Psychology (both cannot be taken for credit toward a degree)
 PSY 302 Psychology of Adolescence
 PSY 306 Psychology of Adult Development

Social/Personality

PSY 309 Personality
 PSY 321 Social Psychology
 PSY 323 Interpersonal Relations
 PSY/WST 335 Psychology of Women
 PSY/SOC 341 Group Dynamics
 PSY 405 Humanistic Psychology

Physiological/Learning

PSY 401 Physiological Psychology
 PSY 406 Perception
 PSY 410 Principles of Learning and Cognition

Self-Development/Applied Psychology

PSY 303 Personal Adjustment
 PSY 308 Stress and its Management
 PSY 310 Industrial Psychology
 PSY 340 Introduction to the Helping Relationship
 PSY 407 Psychology of the Abnormal
 PSY 426 Child Psychopathology

In addition to the PSY courses required for the Bachelor of Science in Psychology, the student must take the following courses:

STA 210 Basic Practice of Statistics (required prior to PSY 214 Applications of Statistics)
 BIO 101, L101 Life Science and Life Science Laboratory
 BIO 102 Science of Heredity OR BIO 103 Environmental Science

Careers in Psychology

Students choose to major in psychology for many reasons. Most often they select the major for a combination of wanting to help other people and of desiring to learn the scientific principles of behavior. Students in the program expect to receive career counseling and information on graduate and/or professional school training. The department has developed methods to meet these expectations.

PSY 201 Career Development in Psychology, covers specialty fields within the discipline and the career opportunities available to degree holders. This course

also discusses graduate and professional school options open to the graduate of the program.

The Career Information and Advising Center has been established by the department to provide individual and group counseling services for undergraduate majors with career concerns. Specific career and academic information is also available at this center. Students are shown how to choose appropriate electives for bachelor's-level careers in mental health services, personnel, management, corrections, rehabilitation, health services, education, and laboratory research.

Faculty advisers specialize in career advising and professional development. The faculty adviser's role is to consult with students about various areas of professional opportunity, explain the role of graduate education, and suggest general areas of study outside of the psychology department that might fit the student's interests and goals. Faculty adviser assignments are made through the Career Information and Advising Center.

PSY 493 Fieldwork: Human Services, and PSY 494 Research Internship in Psychology, are two of the upper-level electives specifically designed to enhance the psychology major's career pursuits for either employment or graduate-level training. Both of these courses provide opportunities for direct, practical experience with close supervision.

The Department of Psychology offers service learning courses that involve participation in an organized community service experience. Through classroom discussions and written assignments, students relate theories and research presented in class with community experiences. Through service learning courses, students:

- gain an understanding and appreciation of the community and its diverse people;
- explore an area of study or a career option; and
- critically reflect on their values and responsibilities as citizens.

Some service learning courses require a two-semester commitment. In many cases, a service learning course will meet the urban experience general education requirement (consult the *Schedule of Classes*).

Graduate School in Psychology

The Career Information and Advising Center maintains up-to-date information from the American Psychological Association and other resources on admission requirements and programs at a variety of graduate schools.

Students considering graduate school should consult their faculty advisers and the Career Information and Advising Center early in their studies at VCU. Specific courses in psychology are strongly recommended for many graduate programs, so careful and early planning is important.

Referrals to other campus services are made through the center to help the student with other professional school options and their respective entrance requirements. Those options are pre-law, pre-med, Master of Social Work, Master of Business Administration, and others.

Honors in Psychology

Psychology majors in the BS program can earn honors in psychology. Any student is eligible to join the program if he or she declares a major in psychology and meets one of the three following entrance requirements.

Entering freshmen must have combined SAT scores of at least 1250 and rank in the top 15% of their graduating high school class. Students transferring to VCU must have a 3.5 Cumulative GPA in at least 30 college semester hours of credit and have no more than 60 college semester hours of credit. Continuing VCU students must have a 3.5 Cumulative GPA and have taken a minimum of 20, but no more than 60 credits at VCU. Promising students who do not quite meet these requirements can be considered for program membership by writing to the director of the psychology honors program.

Once admitted to the program, the honors student must fulfill three basic program requirements.

First, students must take a minimum of 9 credits in psychology courses that are designated as Honors sections. PSY 497, 498, and 499 may NOT be used to fulfill this requirement.

Next, Honors students must enroll for a minimum of three credits in PSY 494 Research Internship in Psychology, no later than the fall semester of their junior year.

Finally, all students must complete PSY 497 Honors Seminar, in their junior year, and complete PSY 498-499 Honors in Psychology, in their senior year.

A student in the program will graduate with honors in psychology if he or she has completed all course requirements with a "B" or better; has maintained a GPA of 3.5, overall and in psychology; and has completed all other requirements for the BS degree.

Minor in Psychology

The minor in psychology consists of 18 credits in psychology, including PSY 101 Introduction to Psychology; one course from each of the four basic areas: Developmental, Social/Personality, Physiological/Learning, and Self-Development/Applied Psychology; and one additional course. PSY 201 Career Development in Psychology cannot be used to meet this requirement. At least nine of the 18 credits must be taken at VCU.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in psychology. A full description of the program appears in Part XX of this *Bulletin*.

Courses in Psychology

PSY 101 Introduction to Psychology. Semester course; 3 lecture and 1 computer-assisted instructional hour. 4 credits. A prerequisite for upper-level work in the field of psychology. A survey of the basic principles, methods of investigation, and fields of study and application. Includes individualized application of principles and methods in computerized learning activities.

PSY 201 Career Development in Psychology. Semester course; 2 lecture hours. 2 credits. Prerequisite: PSY 101. Introduction to the dis-

cipline of psychology and the career alternatives available in various specialties. Self-assessment, career decision-making skills, educational program planning methods will be covered. Special topics will include graduate/professional school options, opportunities for minority students, and job search strategies for the BA or BS psychology major.

PSY 214 Applications of Statistics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSY 101 and STA 210. Frequency distributions, measures of central tendency and variability; sampling, probability, correlation, and significance tests as applied in psychological data.

PSY 301 Child Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. A study is made of the growth and development of the child until puberty. Childlife is viewed in terms of physical, mental, social, emotional, and educational factors. (PSY 304 Life Span Developmental Psychology may not also be taken for credit.)

PSY 302 Psychology of Adolescence. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101 and either PSY 301 or PSY 304. A study of mental, moral, social, and physical development from puberty to maturity viewed as in child psychology. Designed for secondary school teachers, youth leaders, and professional psychologists.

PSY 303 Personal Adjustment. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Surveys major theories of personality as a basis for studying theory, research, and intervention into areas that require personal adjustment. Such areas include sense of self, stress and coping, work and career, and several varieties of interpersonal relationships. Positive adjustment and growth as well as problems are discussed.

PSY 304 Life Span Developmental Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Reviews the basic concepts and principles of physical, cognitive, and social development at each major stage of life—prenatal, infancy, toddlerhood, preschool, middle childhood, adolescence, adulthood, and old age. Consideration is given to the study of development at each stage of life and to different theoretical explanations for development. (PSY 301 Child Psychology may not also be taken for credit.)

PSY 305/EDU 305 Educational Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. The application of psychological principles to the teaching-learning process with special emphasis on theories of learning and development.

PSY 306 Psychology of Adult Development. Semester course; 3 lecture hours. 3 credits. Prerequisites: PSY 101 and either PSY 301 or PSY 304. The life stages and transitions of the young adult, middle age, and young-old phases of the life cycle are considered, following a review of methods of research within life-span development psychology. Topics include the impact of events such as birth of the first child, job relocation, mid-life re-evaluation, and anticipated retirement.

PSY 308 Stress and Its Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Physiological and psychological aspects of stressors and the stress response. Review of principles, research, and methods of stress management, such as relaxation, self-suggestions, meditation, and biofeedback.

PSY 309 Personality. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. The study of the various approaches to understanding human behavior in terms of personality theory. Various theories will be examined for commonality and uniqueness in assumptions, dynamics, and development of personality.

PSY 310 Industrial Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Application of psychological principles and techniques to problems in personnel management and human engineering; recruitment, selection, training, and placement in industry; criteria in testing and test development; morale evaluation and improvement, employee counseling; work-management communications; human engineering in equipment design, quality control, working conditions, and safety.

PSY 317 Experimental Methods. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSY 101 and PSY 214.

Introduction to experimental procedures and laboratory techniques in psychology. Demonstrations and experiments in sensation, perception, learning, emotion, and motivation.

PSY 318 Principles of Psychological Tests and Measurements. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101 and PSY 214. Concepts in psychological measurement and a survey of commonly used tests; testing procedures and rationale underlying these tests; tests of intelligence, aptitude, achievement, interest, and personality critically examined, procedures described for selecting and evaluating specific group tests in these areas.

PSY 321 Social Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Survey theory and research in social psychology. Topics include interpersonal and social influence processes, attitudes and social cognition, the impact of personality on social behavior, conformity, leadership, and small group behavior.

PSY 322/AAS 322 Personality and Behavior of the African-American. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. A study of personality factors such as motivation, ego-functioning, and the socialization processes, with special emphasis on living conditions of African-Americans.

PSY 323 Interpersonal Relations. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Analyzes human relations from various theoretical perspectives. Typical topics include the effects of attraction, friendship, love, and dependency on relationships; the evolution of relationships from initiation through termination. Strategies for increasing effectiveness of communication between individuals are also addressed.

PSY 333/RST 333 Psychology and Religious Experience. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health, and human values.

PSY 335/WST 335 Psychology of Women. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse.

PSY 340 Introduction to the Helping Relationship. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Overview to the dynamics of communication in a helping relationship. Didactic material includes the principles of empathy, nonverbal behavior, problem solving, crisis intervention, and interview techniques. Basic para-professional counselor skills will be demonstrated and practiced through structured exercises.

PSY 341/SOC 341 Group Dynamics. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership, and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself.

PSY 401 Physiological Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Data from the fields of anatomy and physiology are presented, and their implications for psychology are discussed. The central nervous system, internal environment, vision, audition, reflexes, emotion, learning behavior disorders, and their physiological components. Behavior of the human organisms is studied from the biopsychological point of view.

PSY 404/SOC 404 Social Psychology of Emotions. Semester course; 3 lecture hours. 3 credits. Prerequisites: PSY 101, SOC 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions.

PSY 405 Humanistic Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite:PSY 101.A critical examination of "third force" psychology, emphasizing person-centered and growth-oriented frameworks for the analysis of behaviors believed unique to humans. The course addresses theory and research on the psychological foundations of consciousness, self-awareness, intentionality, symbol manipulation, and related topics which may define human nature as distinct from that of other species.

PSY 406 Perception. Semester course; 3 lecture hours. 3 credits. Prerequisite:PSY 101. Perception of information from sensory systems with concentration on vision and hearing. Research and theories on how we learn and judge color, form,movement,depth,and how we integrate these in object identification.

PSY 407 Psychology of the Abnormal. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Development of personality is discussed,with emphasis on factors leading to maladjustment.Lectures and reading cover the symptom groups of emotional disorders of both psychological and organic origin. Methods of assessing and treating these disorders are surveyed.

PSY 410 Principles of Learning and Cognition. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Comprehensive treatment of learning and cognition with emphasis on humans, from behavioral, cognitive, biological, and developmental viewpoints. Topics include conditioning, information processing, memory, sociobiology, and cognitive and moral development.

PSY 412 Health Psychology. Semester course;3 lecture hours. 3 credits. Prerequisites:PSY 101,PSY 308 or PSY 401, or consent of instructor. Application of the principles and techniques of psychology to the field of medicine, to health maintenance, and to illness. The integration of theoretical, research,and applied issues is emphasized in the analysis of such topics as psychological/behavioral factors contributing to and protecting against physical illness (stress, smoking, exercise), factors relating to treatment and recovery (coping, treatment compliance),psychological problems resulting from illness and injury, and specific techniques and problem areas in health psychology (such as biofeedback, pain management, pediatric psychology, geropsychology, rehabilitation psychology, and lifestyle change.)

PSY 426 Child Psychopathology. Semester course;3 lecture hours. 3 credits. Prerequisite:PSY 101 and either PSY 301 or PSY 304.Principal childhood behavioral abnormalities. A review of causes, assessment, and diagnostic methods, and treatment, intervention, and prevention approaches.

PSY 451 History and Systems of Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite:PSY 101,open to PSY major students of junior or senior standing. The history of psychological ideas and theories emphasizing the origins and interrelationships of the major viewpoints and systems from ancient Greece to the present.

PSY 491 Topics in Psychology. Semester course; 3 lecture hours. 3 credits. Maximum total of six credits in topics courses. Prerequisite: PSY 101.An in-depth study of selected topics and issues in psychology. See the *Schedule of Classes* for specific topics to be offered.

PSY 492,PSY 493 and PSY 494 may be repeated for a total of six credits but a maximum of twelve credits total for all three courses is allowed.

PSY 492 Independent Study. Semester course; variable; 1, 2, or 3 credits per semester. Maximum of six credits for all independent study courses. PSY 492; PSY 493;PSY 494 may be repeated for a total of six credits but a maximum of twelve credits total for all three courses. Prerequisite:PSY 101.Open only to students of junior or senior standing who have acquired at least twelve credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. Independent study is defined as student-conceived and initiated readings or research project which is supervised by a psychology faculty member. An oral examination or written, comprehensive paper is required at the end of the semester.

PSY 493 Fieldwork: Human Services. Semester course; 3 credits. Prerequisite: Permission of instructor. Students are placed in an agency which will provide supervised work experience in various aspects of helping other people. The setting might be a government or private community agency, or a corporation, depending on the student's goals. The student works eight hours per week at the placement site, attends several group discussion sessions during the semester, and completes written assignments. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

PSY 494 Research Internship in Psychology. Semester course; variable;1,2,or 3 credits per semester. May be repeated for a maximum of six credits with adviser's approval. PSY 492; PSY 493;PSY 494 may be repeated for a total of six credits but a maximum of twelve credits total for all three courses. Prerequisite:PSY 101 and permission of faculty research supervisor must be obtained prior to registration. Prerequisites:PSY 214, 317, or permission of supervisor. Students will work on various phases of a research project (design, data collection, data analysis, manuscript writing) under a psychology faculty member's close supervision.This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment.

PSY 497 Honors Seminar. Semester course;2 lecture hours. 2 credits. Prerequisite:PSY 101 and junior standing and admission to the Honors in Psychology Program. Pre or corequisite:PSY 317.An introduction to the scientific process, particularly as applied to the field of psychology. Prepares students for future research experience, and surveys current research, opportunities for post-graduate study, and professional development in psychology.

PSY 498-499 Honors in Psychology. Continuous course; 3 lecture hours. 2-3 credits. Prerequisite:PSY 101 and consent of undergraduate committee of the Psychology Department. Discussion will include advanced research strategies, related professional issues, and topics determined by the student's interest. Students are required to develop and complete a senior honors thesis which will be the major emphasis of the second semester.

Interdisciplinary Degree Program in Science

Andrew D. Lacatell

Assistant Director, Center for Environmental Studies (1993) BA 1993 University of Richmond; MIS 1995 Virginia Commonwealth University; MPH 1997 Medical College of Virginia of Virginia Commonwealth University

The purpose of the interdisciplinary program in science is to provide students with a broad and interdisciplinary, yet fundamental, grounding in the sciences. In addition to the broad spectrum of required mathematics and science courses, students select a concentration from biology, chemistry, general science, mathematics, or environmental studies. The mathematics and general science tracks are particularly suited for students interested in careers in early or middle school science or mathematics education. They also should be useful for prospective executives in science-related industries, for students preparing for law school, and for others (prospective science writers and illustrators, for example) for whom a broad science background would be valuable.

Students completing this curriculum earn a bachelor of science degree in science.

For information concerning the program and advising, contact the program coordinator. Selected faculty in biology, chemistry, environmental studies, mathematical sciences, and physics are the academic advisers for this program.

BS in science majors interested in teaching careers in early, middle, or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in science and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Division of Teacher Education.

Degree Requirements

Bachelor of Science in Science. The bachelor of science curriculum in science requires a minimum of 120 credits.

Along with the general requirements of the Academic Campus and the College of Humanities and Sciences for a BS degree, this curriculum requires 32-36 credits in **Core Science and Mathematics Courses** (see chart) and 30-39 credits in one of the following tracks: biology, chemistry, general science, mathematics, or environmental studies. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test.

Core Course Requirements. See chart for beginning core courses in the program.

Choose one of the following five tracks:

Biology Track	<i>Credits</i>
BIO 152 and L152 Introduction to Biological Sciences II and Laboratory	4
BIO 218 Cell Biology	3
BIO310 and L310 Genetics	4

BIO 317 Ecology	3
BIO 392 Introduction to Research	1
CHE 102 and L102 General Chemistry and Laboratory	5
PHY 105 and L105 Physical Geology	4
PHY 202 and L202 General Physics and Laboratory OR PHY 208 and L208 University Physics and Laboratory	4 or 5
PHY 391 Geologic Fieldwork	1
One upper-level animal and one upper-level plant course, with laboratories	8
	<hr/> 37 or 38

Chemistry Track	<i>Credits</i>
BIO 152 and L152 Introduction to Biological Sciences II and Laboratory	4
BIO 317 Ecology	3
BIO 392 Introduction to Research	1
CHE 102 and L102 General Chemistry and Laboratory	5
CHE 301-302 Organic Chemistry	6
CHE L301 and L302 Organic Chemistry Laboratory	4
CHE 309 and L309 Quantitative Analysis	4
PHY 105 and L105 Physical Geology	4
PHY 202 and L202 General Physics and Laboratory OR PHY 208 and L208 University Physics and Laboratory	4 or 5
PHY 391 Geologic Fieldwork	1
	<hr/> 36 or 37

Environmental Studies Track	<i>Credits</i>
BIO 152 and L152 Introduction to Biological Sciences II and Laboratory	4
BIO 317 Ecology	3
BIO 332/ENS 330 Environmental Pollution OR BIO 432 Biology of Polluted Waters	3
CHE 102 and L102 General Chemistry and Laboratory	5
ECO 325 Environmental Economics	3
ENS/GEO 335 and L335 Environmental Geology	4
ENS 490 Research Seminar in Environmental Studies	3
PHY 202 and L202 General Physics and Laboratory OR PHY 208 and L208 University Physics and Laboratory	4 or 5

Science Program Core Course Requirements

Core Courses	Biology Track	Chemistry Track Science Track	Environmental Track	Mathematics Track	General Science
Introductory Biology Course (4-5 credits)	BIO 151 with Laboratory	BIO 151 with Laboratory	BIO 151 with Laboratory	BIO 101,102, 103* or 151 with Laboratory	BIO 101, 102,103 or 151 with Laboratory
Introductory Chemistry Course (4-5 credits)	CHE 101 with Laboratory	CHE 101 with Laboratory	CHE 101 with Laboratory	CHE 101 or CHE 110* with Laboratory	CHE 101 or CHE 110* with Laboratory
Introductory Physics Course (4-5 credits)	PHY 201 or 207	PHY 201 or 207	PHY 201 or 207	PHY 101,L101 or 107*,or 201, or 207	PHY 101,L101 or 107,or 201, or 207
Geography Course (4 credits)	GEO 203 or 204 with Laboratory	GEO 203 or 204 with Laboratory	GEO 203 or 204 with Laboratory	GEO 203 or 204 with Laboratory	GEO 203 or 204 with Laboratory
Science Course (3 credits)	SCI300 or ENS/GEO 401	SCI300 or ENS/GEO 401	ENS/GEO 401	SCI 300	SCI300
Additional Science Course (3 credits)	SCI 301 or ENS/GEO 411	SCI 301 or ENS/GEO 411	ENS/GEO 411	SCI 301	SCI 301
Math Course (By placement or 4 credits)	MAT 151	MAT 151	MAT 151	MAT 151	MAT 151
Additional Math Course (3-4 credits)	MAT 200 or STA beyond 210	MAT 200	STA beyond 210	MAT 200	MAT 200
Statistics Course (3 credits)	STA 208 or 210	STA 208 or 210	STA 210	STA 208 or 210	STA 208 or 210

* Recommended among options.

POS/ENS 311 Politics of the Environment	3
SOC/POS 320 Research Methods in the Social Sciences	3
One additional ENS course chosen with adviser's approval	3
	38 or 39

General Science Track

BIO 315/ENS 314 Man and Environment, BIO 332/ ENS 330 Environmental Pollution OR BIO 317 Ecology	3
ENS/GEO 401 Meteorology and Climatology	3
ENS/GEO 411 Oceanography	3
PHY103 and L103 Astronomy	4
PHY 105 and L105 Physical Geology	4
Second sequence of introductory Biology, Physics and Chemistry courses with laboratories	12-15
Two additional courses at the 200 level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	6
	35-38

Mathematics Track

CSC 128 Computer Concepts and Applications OR CSC 255 Structured Programming	3
CSC 554 Applications of Computers in Teaching Mathematics	3
MAT 131 Contemporary Mathematics	3
MAT 211 Mathematical Structures	3
MAT 303 Geometry	3
MAT 310 Linear Algebra	3
MAT 327 Mathematical Modeling	3
MAT 351 Applied Abstract Algebra	3
Two additional courses at the 200 level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	6
	30

Courses in Interdisciplinary Science

SCI 300 Experiencing Science. Semester course; 5 studio hours. 3 credits. Prerequisites: 4 credits in biology, 4 credits in physical science, 3 credits in mathematics, and STA 208 or 210. Study of the methods and processes used by scientists in investigations. Guided, active replication of great discoveries in major scientific disciplines in physical science, life science, and earth science.

SCI 301 Investigatory Mathematics and Science. Semester course; 3 lecture hours. 3 credits. Prerequisites: 4 credits in biology, 4 credits in physical science, 3 credits in mathematics, and STA 208 or STA 210. Students investigate real world science problems, formulate model solutions to the problems, produce project reports, and present their solutions to class. Problems selected from areas including water quality, epidemics and spread of diseases, heat loss and gain, genetics, and drugs in the body.

Social Sciences**Joseph A. Marolla**

Associate Professor and Chair, Department of Sociology and Anthropology and Coordinator, Social Sciences (1975) BA and MA University of Rhode Island; PhD 1974 University of Denver

Courses in social sciences are offered by a number of academic departments. However, these courses have been grouped together.

Courses in Social Science

SSC 291 Issues in Social Science. Semester course; variable; 1-3 credits per semester. Maximum total of six credits. An interdisciplinary course structured around social issues pertinent to today's society. See

the *Schedule of Classes* for particular issues to be covered and the semester credit for which each course will be offered.

SSC 303 Marriage and Family Relationships. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. Marriage and the family in contemporary society. Topics discussed will include the effects of masculine and feminine roles on marital and parent-child relationships, how role problems are resolved, sexual adjustments, financial adjustment, family planning, and retirement.

SSC 330 The Psychology and Sociology of Death. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101 or SOC 101. An interdisciplinary study of the encounter with death, death and personality, the organizational processing of death, and demographic regularities of dying. Sociologists and psychologists jointly teach the course.

SSC 340 Human Sexuality. Semester course; 3 lecture hours. 3 credits. A study of the variety of the forms, sources, and consequences of human sexual behaviors and the attitudes, beliefs, and values associated with them. The data and its analysis are directed to the significance of sex in human experience.

SSC 350 The Construction of Culture. Semester course; 3 lecture hours. 3 credits. An examination, using methods from several disciplines, of the ways in which human beings construct the shared meanings that constitute culture.

Department of Sociology and Anthropology**Joseph A. Marolla**

Associate Professor and Department Chair (1975) BA and MA University of Rhode Island; PhD 1974 University of Denver

J. Sherwood Williams

Professor and Associate Chair (1971) BA 1964 California State College, Long Beach; MA 1968 California State College, Los Angeles; PhD 1972 Washington State University

- Bromley, David G. (1983) *Professor* AB 1963 Colby College; MA 1966 and PhD 1971 Duke University
- Creighton-Zollar, Ann (1981) *Associate Professor of Sociology and Director, African-American Studies Program* BA, MA and PhD 1980 University of Illinois, Chicago Circle
- Croteau, David R. (1994) *Assistant Professor* BA 1984 Brandeis University; MA 1989 and PhD 1993 Boston College
- Franks, David J. (1977) *Professor* BA 1957 Millsaps College; PhD 1970 University of Minnesota
- Henry, Neil W. (1975) *Associate Professor of Sociology and Anthropology and Mathematical Sciences* BA 1958 Wesleyan University; MA 1960 Dartmouth College; PhD 1970 Columbia University
- Honnold, Julie A. (1974) *Associate Professor* BA Knox College; MA and PhD 1974 University of Denver
- Knipe, Edward E. (1969) *Associate Professor* BA and MA University of Arizona; PhD 1969 University of Kentucky
- Lyng, Stephan G. (1987) *Associate Professor* BA 1973, MA 1977 and PhD 1982 University of Texas
- Mahoney, John S. (1988) *Instructor of Sociology and Anthropology and Program Director, Philip Morris BGS Program, Division of University Outreach* BA 1970, MA 1976 and PhD 1983 University of Virginia
- McGrath, John H., III (1971) *Professor* BA Albright College; MA and PhD 1967 Rutgers State University
- Nelson, Lynn D. (1972) *Professor* BA Abilene Christian College; MA University of Alabama; PhD 1971 Ohio State University
- Palen, J. John (1980) *Professor* BA 1961 University of Notre Dame; MA 1963 and PhD 1967 University of Wisconsin, Madison
- Rankin, Daphne L. (1988) *Lecturer and Project Director of the Mid-Atlantic AIDS Education and Training Center* BA 1976 University of North Carolina; MS 1987 Virginia Commonwealth University
- Scully, Diana H. (1976) *Professor and Director, Women's Studies Program* BA 1970, MA 1972 and PhD 1977 University of Illinois, Chicago Circle
- Smedley, Audrey Y.* (1995) *Professor of Sociology and Anthropology and African-American Studies* BA 1954 and MA 1957 University of Michigan; PhD 1967 Victoria University of Manchester

Turner, Christina B. (1994) *Assistant Professor* BA 1982 and MA (History) 1984 University of Denver; MA 1987 and PhD 1992 Tulane University

Emeriti Faculty

Diana, Lewis *Professor Emeritus* AB Harvard University; MA and PhD University of Pittsburgh

* Joint Appointment

The bachelor of science curriculum in sociology and anthropology seeks to ensure that each student develops a solid foundation in the basic principles, theories, and techniques of analysis in one of the two disciplines. Since students majoring in sociology or anthropology vary in their interests and career goals, the curriculum allows for a great deal of flexibility developing individual courses of study. Students who are interested in pursuing graduate studies in sociology or anthropology will usually take more than the minimum number of upper-level courses. The department provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships, and Honors research.

Sociology and anthropology majors interested in teaching careers in early, middle, secondary, or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in sociology and anthropology and a master's degree in teaching. For more information about this extended program administered jointly by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Master of Science Program in Sociology. For information about graduate work in sociology, see the *Graduate Bulletin*.

Degree Requirements

Bachelor of Science in Sociology and Anthropology. The BS curriculum in sociology and anthropology requires a minimum of 120 credits with at least 31 of those credits in sociology and anthropology, 22 of which must be in upper-level (300-400) courses. **ANT 103 Cultural Anthropology and SOC 101 General Sociology are required of all majors.** Students can choose to concentrate in either sociology or anthropology.

In fulfilling the mathematical sciences general education requirements of the College of Humanities and Sciences, students seeking a BS in sociology or anthropology should complete STA 210 Basic Practice of Statistics. The department recommends that students complete BIO 102 Science of Heredity or BIO 103 Environmental Science to complete the biological science part of the General Education natural sciences requirement.

Sociology Concentration. Students who choose to concentrate in sociology must take at least 16 of the 22 required upper-level credits in sociology (SOC) courses; the rest may be in anthropology (ANT) courses. SOC 205 Introduction to Social Science Computing, SOC 320 Research Methods in the Social Sciences, SOC 402

Sociology Theory, and SOC 490 Senior Project are required in the sociology concentration. **In addition, students must take one course from three of the following four content areas:**

Social Organizations and Institutions

SOC 315 Education and Society
SOC 360 Sociology of Religion
SOC 370 Mass Media and Society
SOC 405 Family Research
SOC 430 Politics, Power and Ideology
SOC 445 Medical Sociology
SOC 470 News Media in a Democratic Society
SOC 475 Organizations and Human Behavior

Control, Conflict and Social Change

SOC 310 Social Movements and Social Conflict
SOC 321 Class, Status and Power
SOC 322 Minority Groups in the United States
SOC 334 Sociology of Women
SOC 352 Social Change
SOC 403 Criminology

The Relationship of Individual and Society

SOC 404 Social Psychology of Emotions
SOC 440 Advanced Social Psychology
SOC 446 Sociology of Mental Disorder

Historical and Cross-Cultural Patterns

ANT 305 Comparative Society
SOC 327 Urban Sociology
SOC 328 Russian Society in Transition
SOC 333 Sociology of Sex and Gender
SOC 380 Drugs, Society, and Culture

Anthropology Concentration. Students who choose to concentrate in anthropology must take at least 16 of the 22 credits in required upper-level anthropology (ANT) courses; the rest may be in sociology (SOC) courses. ANT 490 Senior Project is required. **In addition, students must take one course from three of the following four content areas:**

Physical/Biological Anthropology

ANT 301 Evolution of Man and Culture

Linguistics

ANT/ENG 449 Introduction to Linguistics

Archaeology

ANT 252 The Archaeology of Richmond
ANT 302 Archaeology Method and Theory
ANT 341 Historical Archaeology
ANT 375 Field Archaeology

Social and Cultural Anthropology

ANT 305 Comparative Society
ANT 315 Field Methods and Research Design
ANT 348 South American Ethnography
ANT 349 Contemporary Cultures of Latin America
ANT 350 Peoples and Cultures of the World
ANT 415 Economic Anthropology
ANT 416 The Origin and Evolution of the Idea of Race
ANT 425 Religion, Magic, and Witchcraft
ANT 454 Anthropological Theory

Minor Requirements – General

Students majoring in sociology and anthropology cannot minor in sociology or anthropology.

Minor in Anthropology. The anthropology minor shall consist of 18 credits, including ANT 103 Cultural

Anthropology. At least 12 credits must be taken from upper-level (300-400) anthropology courses. The remaining three credits may be from any sociology or anthropology course.

Minor in Sociology. The sociology minor shall consist of 18 credits including SOC 101 General Sociology. At least 12 credits must be upper-level (300-400) sociology courses including SOC 402 Sociological Theory. The remaining three credits may be from any sociology or anthropology course.

Honors in Sociology and Anthropology

Majors in the Department of Sociology and Anthropology may earn a BS degree with Honors in Sociology or Honors in Anthropology. The Sociology/Anthropology Honors Program is available to outstanding senior majors and involves the preparation of a senior thesis during one of the last two semesters of the baccalaureate degree program. In order to participate in the program, students must meet program entrance requirements, identify a project mentor, and receive approval for a project proposal. Honors will be awarded following acceptance of the thesis by the Honors Program Committee.

Honors Program Description

The Sociology/Anthropology Honors Program is designed to provide outstanding majors with the opportunity to pursue an independent research project under the direction of a faculty mentor. The research is conducted during one of the final two semesters of the undergraduate degree program. The project may involve any recognized sociological/anthropological topic, theory, and method that promises to enhance the honor student's disciplinary perspective, skills, and creativity. The project may involve an extension of work initiated in a course, an entirely new project or a collaborative project with the faculty mentor. If the project is an extension of work initiated in a course or developed collaboratively with the mentor, the independent, separate, substantial development of the topic in the thesis should be evident. The thesis should reflect work of high quality for a senior-level course.

Honors Eligibility Criteria and Application Procedure

Students majoring in the Department of Sociology and Anthropology, with a concentration in either sociology or anthropology, are eligible to participate in the departmental honors program if they have maintained a 3.0 overall grade-point average and a 3.3 grade-point average in the major. Candidates should apply to the Sociology/Anthropology Honors Program Committee. Application materials consist of transcripts documenting the required grade-point averages, a description of the proposed project, which should not exceed three typed pages, and the name of the faculty member who has agreed to act as project mentor. Application must be made and project approval received in the semester preceding the one in which the research project will be conducted. The Committee will review the application mate-

rials, meet with the candidate to discuss the project proposal, and render an admission decision. Once admitted, program participants will enroll in an Honors Research course. The course may be included in the required hours for the major.

Submit applications to the Sociology/Anthropology Honors Program Committee, Department of Sociology and Anthropology, Virginia Commonwealth University, Richmond, VA 23284-2040. For further information, contact Dr. John McGrath, Director of Undergraduate Studies.

Award of Honors

The completed senior thesis will be submitted to the Honors Program Committee following its acceptance by the faculty mentor and confirmation that the candidate has maintained the requisite grade-point averages. Upon submission of the thesis, the student will make an oral presentation to the Committee summarizing the research procedures and findings. The Committee will then evaluate the thesis for the award of honors. For acceptance, the thesis must be evaluated as deserving of a grade of "A" in the Honors Research Course. Acceptance of the thesis will earn an Honors Program Certificate from the department and notation of the student's standing as an honors graduate on the final grade transcript. Honors students will also receive preferential consideration as applicants to the Sociology Master's Degree Program.

Undergraduate Topics Courses

Topics Courses in both sociology and anthropology (SOC 391 and ANT 391) are an integral part of the program and provide a rare opportunity for the advanced student. Generally these courses are restricted to a small number of students who share specialized interests in a topic which is either too advanced or too limited in its general appeal to justify its inclusion as a standard offering. At least one such seminar is offered each semester and the topics course can be repeated up to a maximum of 18 credits as long as there is no duplication of the topics.

Independent Study

These courses (SOC 492 and ANT 492) are designed for juniors and seniors capable of doing independent work on selected topics under the directions of specific faculty. For example, if a course is not regularly offered in a specific area of interest to a particular student, and if there are not enough students in the topics course, the student may, with the permission of the instructor, enroll in independent study.

Students may earn a maximum of 12 credits in departmental independent study courses, but may not enroll for more than six credits per semester. Only majors in sociology and anthropology or related fields can enroll in these courses. All students entering these courses must have completed a minimum of 12 credits in sociology or anthropology and achieved an overall sociology/anthropology grade-point average of 2.7 or more.

Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in sociology and anthropology. A full description of this program appears in Part XX of this *Bulletin*.

Other Graduate Work

For information about graduate work and doctoral work in social policy, social work, and urban services, see the *Graduate Bulletin*. These advanced degree programs are of particular interest to sociology and anthropology students.

Courses in Anthropology

ANT 103 Cultural Anthropology. Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from non-Western cultures.

ANT 105 Introductory Archaeology. Semester course; 3 lecture hours. 3 credits. A survey of findings of world archaeology, from the campsites of early human ancestors through the rise and spread of civilizations.

ANT 200/AAS 200 Introduction to African Societies. Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems, and other cultural features that are traditional to its people.

ANT 252 The Archaeology of Richmond. Semester course; 3 lecture hours. 3 credits. The application of archaeological methods to Richmond's prehistoric, historic, and modern material culture. The city and surrounding counties are treated as an archaeological site and region. The artifacts left by past and present inhabitants provide a foundation for analyzing ways of life in the area.

ANT 301 The Evolution of Man and Culture. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. The application of evolutionary theory to the physical and cultural development of *Homo sapiens*.

ANT 302 Archaeology Method and Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. The basic theoretical and methodological tools of archaeology, including methods of dating, artifact studies, site interpretation, and regional analysis. Students will learn to apply technical and logical skills by solving simulations of real-world archaeological problems.

ANT 304/SOC 304/WST 304 The Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or ANT 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

ANT 305 Comparative Society. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. An introduction to social anthropology. The study of how social institutions such as marriage, family, law, economics, and government are organized and operate in different kinds of societies.

ANT 311, 312/GEO 311, 312 History of Human Settlement. Semester course; 3 lecture hours. 3, 3 credits. A cultural geography of man's diffusion over the earth, agricultural and urban systems, exploration, migration, and colonization, and changing attitudes toward the environment. First semester: before 1750. Second semester: during and since the Industrial Revolution.

ANT 315 Anthropological Field Methods and Research Design. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. Overview of quantitative and qualitative anthropological field techniques

as well as the ethical dimension of anthropological fieldwork. Basics of research design, effective methodology, and writing grant proposals.

ANT 348/INT 348 South American Ethnography. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. General ethnographic survey of both highland and lowland indigenous cultures of South America and pertinent cultural changes due to European contact.

ANT 349/INT 349 Contemporary Cultures of Latin America. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. This course surveys contemporary cultures of Latin America. It addresses sociocultural developments from an anthropological perspective and introduces some concepts from development anthropology and applied anthropology.

ANT 350/INT 350 Peoples and Cultures of the World. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. May be taken for a maximum of six credits in two different world areas. A survey of the culture and traditions within a specific geographic area such as Latin America, Oceania, or Southeast Asia. See the *Schedule of Classes* for areas being offered in a particular semester.

ANT 375 Field Archaeology. Semester course; 3 lecture, 8 field and laboratory hours. 6 credits. Introduction to archaeological field and basic laboratory techniques. Archaeological data collection (excavation or survey) forms the core of the course.

ANT 380/SOC 380 Drugs, Society, and Culture. Semester courses; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or ANT 103. An examination of the anthropological and sociological significance of drugs and drug use from prehistoric cultures through modern societies.

ANT 391 Topics in Anthropology. Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of eighteen credits in departmental topics courses that may be applied to the major. Prerequisite: permission of instructor. Seminar on current specialized areas of anthropological interest. See the *Schedule of Classes* for specific topic to be offered each semester.

ANT 394/HIS 394 Historical Archeology. Semester course; 3 lecture hours. 3 credits. Prerequisites: ANT 103 or ANT 105 and one history course. A review of the methods and findings of historical archaeology from the fifteenth century to the present. Special emphasis on the use of written documents and archaeological artifacts to interpret society and culture in the modern world.

ANT 415 Economic Anthropology. Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies.

ANT 416/AAS 416 The Origin and Evolution of the Idea of Race. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103 or AAS 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the twentieth century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon.

ANT 420/AAS 420 Women of Africa. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103 or AAS 103 or permission of instructor. This course looks at the traditional roles of women in African Societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context.

ANT 425 Religion, Magic, and Witchcraft. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo, and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society.

ANT 449/LIN 449/ENG 449 Introduction to Linguistics. Semester course; 3 lecture hours. 3 credits. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

ANT 450/ENG 454/INT 454 Cross-Cultural Communication. Semester course; 3 lecture hours. 3 credits. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems.

ANT 454 Anthropological Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103 or SOC 101. Major theoretical approaches in understanding cultural similarities and differences.

ANT 490 Senior Project. Semester course; 1 credit. Required of all Sociology and Anthropology majors with an anthropology concentration. Students must register for this course with the permission of an instructor of a regular course offering. Students are required to produce a project report that must be submitted to the faculty of the course as well as to the director of undergraduate studies for the Department of Sociology and Anthropology prior to graduation.

ANT 492 Independent Study. Semester course; variable credit. Maximum of six credits per semester; maximum total of twelve credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least twelve credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be procured prior to registration for the course. Cannot be used in place of existing courses.

Courses in Sociology

SOC 101 General Sociology. Semester course; 3 lecture hours. 3 credits. An introduction to the study of human society. The basic concepts of society and culture and their relationships to each other are studied and then used to analyze the major social institutions.

SOC 104/AAS 104 Sociology of Racism. Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on the individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation, and as a form of racism as a "faith system," as exploitation, and as a form of human conflict. The central focus of interest will be on black-white relationships.

SOC 205/POS 205 Introduction to Social Science Computing. Five-week course; 4 lecture/laboratory hours. 1 credit. An introduction to the use of SPSS for storage, retrieval and exploration of social science data. Required of all sociology and anthropology majors concentrating in sociology.

SOC 302 Contemporary Social Problems. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. The examination from a sociological perspective of contemporary social problems such as population growth, crime, racism, family problems, substance abuse, and aging in terms of their impact on American social institutions and values.

SOC 303 Sociology of Deviant Behavior. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. An analysis of relationship between social structure, social control, and patterns of social deviance; a survey and critique of present social theories in light of empirical research and application of the theories to selected problem areas.

SOC 304/ANT 304/WST 304 The Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or ANT 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

SOC 305/AAS 305/WST 305 Sociology of the Black Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

SOC 310 Social Movements and Social Conflict. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Theory and practice of social movements, community organizing, and other forms of collective behavior.

SOC 315 Education and Society. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Analysis of education as a social institution in the societal context. Cross-cultural comparative perspectives on education.

SOC 318 Social Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A review of the ideas of major social philosophers whose works are now the foundation of much modern sociology.

SOC 320/POS 320 Research Methods in the Social Sciences. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: SOC/POS 205 or equivalent. Current methods of research in the social sciences.

SOC 321 Class, Status, and Power. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Analysis of social mobility, class, status, and power.

SOC 322 Minority Groups in the United States. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A study of the various racial, religious, and ethnic minority groups. Issues of power, pluralism and assimilation are addressed as well as the relationship between subcultures and the dominant culture.

SOC 325 Analysis of Sociological Data. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: SOC 205 and STA 210. Statistical techniques used in the analysis of data from sample surveys and censuses, including tabular, graphical and inferential procedures. SPSS software will be used in the laboratory.

SOC 327 Urban Sociology. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Origin, character, and significance of urban communities. Ecological and social factors are analyzed as well as changes in urban social organization and their consequences.

SOC 328 Russian Society in Transition. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of the instructor. An analysis of Russian culture and social institutions as they are today and in historical perspective. Throughout the course interrelationships among politics, the economy and social life are examined, with particular emphasis on the ideological implications of Russian/Soviet architecture, art, and mass media; on environmental issues and health; on social problems and the legal systems; and on gender, the work world, and family interaction.

SOC 330/INT 330 Global Societies: Trends and Issues. Semester course; 3 lecture hours. 3 credits. Prerequisites: INT/POS 105 or POS 201 or SOC 101. An analysis of factors that are promoting the globalization of social, economic, and political relations, and an inquiry into implications of these developments for individuals, localities, nations, and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations.

SOC 331 Juvenile Delinquency. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Analysis of the biological, cultural, psychological, and social factors involved in juvenile delinquency and their relation to current techniques of treatment, prevention, and control.

SOC 333/WST 333 Sociology of Sex and Gender. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. A cross-cultural and evolutionary exploration of the interdependence between male and female roles in the following social institutions: family, law, economics, politics, religion, education, and health.

SOC 334/WST 334 Sociology of Women. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or consent of instructor. This course will examine the position and status of women across societies

and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized.

SOC 340 Self and Society. Semester course; 3 lecture hours. 3 credits. Focused discussion of the regularities in human behavior that arise due to man's participation in social groups. Emphasis will be placed on such topics as communications, attitudes, language, interpersonal perception, personal identities, and social interaction.

SOC 341/PSY 341 Group Dynamics. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership, and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself.

SOC 352 Social Change. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. This course provides an analysis of the major theoretical perspectives, sources, processes, patterns, and consequences of social change. It considers factors that stimulate or hinder the acceptance of change and the unintended consequences of change.

SOC 360/RST 360 Sociology of Religion. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population.

SOC 370 Mass Media and Society. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101, MAC 101, or POS 103. A survey of the organization and social impact of the major types of mass media. Potential topics include the media as socializing agents; the effect of media messages on cultural patterns and social values; the impact of technology on social behavior; the role of "audiences" in interpreting media content; political and economic influences on the media industry; and the media as an instrument of social change. The structure and functions of the media in different societies will be compared.

SOC 380/ANT 380 Drugs, Society, and Culture. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or ANT 103 and at least junior standing. An examination of the anthropological and sociological significance of drugs and drug use from prehistoric cultures through modern societies.

SOC 391 Topics in Sociology. Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of eighteen credits in all departmental topics courses that may be applied to the major. Check with department for specific prerequisites. A discussion of specialized areas of sociological interest. See the *Schedule of Classes* for specific topics to be offered each semester.

SOC 401/AAS 401 Americans and the U.S. Health Care System. Semester course; 3 lecture hours. 3 credits. Prerequisite: AAS 103, AAS 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United States. Students are required to participate in an experiential exercise designed to enhance learning.

SOC 402 Sociological Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: At least 18 credits in sociology. A study of the works of the major sociological theorists of the twentieth century.

SOC 403 Criminology. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Analysis of the nature, extent, and distribution of crime, emphasizing theories of and research on causation, prediction, and prevention.

SOC 404/PSY 404 Social Psychology of Emotions. Semester course; 3 lecture hours. 3 credits. Prerequisites: PSY 101, SOC 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions.

SOC 405 Family Research. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC/ANT/WST 304. Classic and contemporary issues in the scientific study of families, with an emphasis on the examination and evaluation of research.

SOC 421 Applied Social Research. Semester course; variable credit. May be repeated for a total of six credits. Prerequisites: SOC 320 and 325. A laboratory course providing training in the application of social research methods under laboratory and field situations to problems of mutual interest to community policy makers and professionals in the disciplines of sociology, social psychology, and anthropology. This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to the tasks of defining, designing, and executing research projects.

SOC 426 Population Dynamics. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. The study of trends in fertility, mortality, population growth, distribution, migration, and composition. The mutual influences of these factors and social organization.

SOC 430 Politics, Power, and Ideology. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Sociological analysis of political organization and behavior. Such subjects as distribution and uses of power, creation and management of group conflict, development and diffusion of political ideologies, and problems of bureaucracy and mass society will be considered.

SOC 434 Sociology of Sport. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. Sport will be viewed as a major social institution within many societies. The class will study the relationship between sport and society both in terms of sport reflecting the ideology and culture of society as well as sport as an active agent of change in society. Race, gender, and social class will be examined within the context of sport.

SOC 436 Work and Management in Modern Society. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. The study of industrial plants and business organizations as social systems.

SOC 440 Advanced Social Psychology. Semester course; 3 credits. Prerequisite: SOC 340. The study of how human groups create the environment that, in turn, influences their individual behavior. The symbolic interactionist perspective will be thoroughly explored for its contribution to the study of persons, objects, and meaning.

SOC 445 Medical Sociology. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A survey of the social, economic, cultural, and social psychological factors in health and illness; the sociology of health and medical care organizations and settings; the sociology of health occupations; and the techniques of research in medical sociology.

SOC 446 Sociology of Mental Disorder. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A survey of selected social, economic, cultural, and social psychological factors in mental health and illness. Such problems as defining mental illness; social factors in the distribution, diagnosis, etiology, and treatment of mental disorders; mental illness as a social role; and research methods used in the sociology of mental illness will be considered.

SOC 470 News Media in a Democratic Society. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A consideration of the role of the news media in society. The course examines the news industry, including its economic organization and professional norms; news media content; the impact of news media in society, especially on the democratic political process; and the significance of political and economic influences on the functioning of the new media.

SOC 475 Organizations and Human Behavior. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. A survey of theory and research in social organizations, including the study of behavior in modern complex human organizations.

SOC 476 Labor, Occupations, and Careers. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101. An examination of labor force participation in terms of the individual worker's experience, the work setting, the nature of occupations, and labor force composition.

SOC 490 Senior Project. Semester course; 1 credit. Required of all sociology and anthropology majors with a sociology concentration. Students must register for this course with the permission of an instructor of a regular course offering. Students are required to produce a project report that must be submitted to the faculty of the course as well as to the Director of undergraduate studies for the Department of Sociology and Anthropology prior to graduation.

SOC 492 Independent Study. Semester course; variable credit. Maximum of six credits per semester; maximum total of twelve credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be procured prior to registration for the course. Cannot be used in place of existing courses.

SOC 493 Field Research Internship. Semester course; 3 credits. Prerequisite: for sociology and anthropology majors of junior or senior standing; maximum 6 credits. Applications must be approved by a faculty adviser and by the internship coordinator. Students are placed in organizations that offer supervised work or research experience appropriate to their interests. Each student must work 150 clock hours in the organization and write a sociological analysis of experiences using appropriate fieldwork methodological techniques.

SOC 498 Honors Research Course. Semester course; 3 credits. Prerequisites: student must be in the Honors Program of the department and have achieved senior status. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in sociological/anthropological analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of a faculty mentor.

SOC 501 The Foundations of Sociological Theory. Semester course; 3 lecture hours. 3 credits. The foundations of theoretical explanation of the social world is addressed from an historical and philosophical perspective. The emergence of contemporary sociological theory in the nineteenth and twentieth centuries is reviewed.

SOC 502 Contemporary Sociological Theory. Semester course; 3 lecture hours. 3 credits. A critical assessment is given of such contemporary theoretical orientations as functionalism, conflict theory, exchange theory, symbolic interactionism, and phenomenology.

Department of Urban Studies and Planning

Gary T. Johnson

Associate Professor and Department Chair (1985) BS 1972 North Michigan University; MUP 1974 Wayne State University; PhD 1979 Texas A & M University

- Accordino, John J. (1986) *Associate Professor* BA 1976 University of Rochester; PhD 1987 Massachusetts Institute of Technology
- Brooks, Michael P. (1987) *Professor* BA 1959 Colgate University; MCP 1961 Harvard University; PhD 1970 University of North Carolina
- Garcia, Margot W. (1989) *Associate Professor* BS 1961 University of New Mexico; MS 1966 University of Wisconsin, Madison; PhD 1980 University of Arizona
- Gulak, Morton B. (1972) *Associate Professor* BA 1961 Pennsylvania State University; MURP 1972 Virginia Polytechnic Institute and State University; PhD 1980 University of Pennsylvania
- Moeser, John V. (1971) *Professor* BA 1965 Texas Technology University; MA 1967 University of Colorado; PhD 1975 George Washington University
- Rugg, Robert D. (1974) *Professor* BA 1965 Wesleyan University; MA 1967 University of Chicago; PhD 1974 University of Ottawa
- Schulz, Peter (1974) *Associate Professor* BS 1965 Shippensburg State College; MS 1966 Illinois State University; PhD 1971 University of Illinois
- Wu, Weiping (1995) *Assistant Professor* BA 1986 and MUP 1989 Tsinghua University; PhD 1996 Rutgers University

Emeriti Faculty

Fonoroff, Allen *Professor Emeritus* BA University of North Carolina; JD Columbia University Law School
 Hormachea, Carroll R. *Associate Professor Emeritus* BA and MS Trinity University

The City

Today, nearly 80 percent of the American people live and work in metropolitan areas. The city has become a center for commerce, industry, the arts, and social interaction. It is a place where many people are involved in a great variety of activities. The city is a crowning achievement of civilization and urbanization and has been the means for the development and maintenance of our present society.

Such an intense concentration of human activity is not without its problems: racial discrimination, poverty, substandard housing, traffic congestion, crime, and pollution. Urban governments are ill equipped to handle these problems because, among other reasons, the available financial resources are decreasing at a time when the needs for municipal services are increasing.

In response to these unpleasant aspects of modern city life, too many city dwellers are moving to the suburban periphery where they have access to the city's resources and shelter from its problems. More than half of the urban population now resides outside the central city. Much commercial, industrial, and recreational activity has also decentralized. The urbanizing suburbs are now beginning to experience the problems of the central city. There is a growing realization that urban problems do not respect boundary lines. The issues are metropolitan in scope and cannot be avoided.

Career Opportunities

Opportunities exist in a wide variety of fields for urban studies graduates. Our recent graduates, those who chose work over graduate or professional school, have found useful and meaningful employment in a number of public agencies and organizations, including planning commissions, housing authorities, community development departments, transportation firms, social welfare agencies, and a variety of private organizations. Most students who chose graduate school have been accepted to leading institutions, enrolling in programs in architecture, planning, law, public administration, business administration, and other majors in the social and behavioral sciences.

The student with a Bachelor of Science degree in urban studies has acquired those skills needed for graduate school or for satisfying employment.

Urban Studies Program

The program in urban studies is designed to familiarize the undergraduate with the metropolis (and the benefits achieved through its growth and development); the social science perspective applied to urban problems; and the development of plans and administration to produce a more livable environment.

The major is designed to provide students with an intellectual understanding of urban phenomenon and

with sufficient methodological skills to undertake entry-level responsibilities in public and private organizations dealing with the issues of urbanization. The program is not preprofessional in nature, but is broad in scope and draws heavily from the liberal arts.

To accomplish these objectives, 12 courses are required of all majors. These courses address basic knowledge across the field of urban studies, including political, economic, and social functions and interactions, the process of planning, research, urbanization, and policy making.

The student is able to choose a concentration in planning, public policy and social change, environment, information systems, or public management. The Richmond metropolitan area is the primary laboratory for the program, and students are constantly challenged by the opportunities for research and community involvement. These concentrations provide students with greater choices for more detailed study. The student may also decide upon a generalized course of study.

The urban studies program is distinctly interdisciplinary in nature. Faculty members represent the following disciplines and professions: planning, geography, political science, law, urban studies, history, economics, architecture, and environmental studies. In addition, supporting urban studies courses are taught by faculty members from other departments within the College of Humanities and Sciences and the University. Students can structure their program of studies to fit individual goals. Intensive participation in curriculum and program planning by urban studies majors is not only encouraged, but solicited.

The most significant distinctions of the urban studies program are:

1. a subject that deals with the contemporary world; and
2. an opportunity to become directly involved in the community through fieldwork. The fieldwork provides further opportunity to develop skills as well as a transition between academic life and post-baccalaureate work life.

The curriculum is divided into various concentrations of study and a general area of urban studies.

Environmental Concentration

The concentration in environmental studies will expose students to natural science fields that are significant for understanding the physical environment of cities, presenting the effects of urban population and land uses on the physical environment, introducing human response to environmental hazards and conditions in a behavioral context, and identifying alternatives for public management of interactions between human beings and environment. The overall objective of the concentration is to introduce the field of environmental management to those urban studies majors who may wish to orient their future experience in this direction.

Information Systems Concentration

A concentration in information systems within the urban studies major is designed for students interested

in urban services and planning careers. This curriculum will provide additional training in computerized information systems.

Courses in this concentration can also be counted toward a Certificate in Planning Information Systems. See the *Graduate Bulletin* for additional details.

Planning Concentration

Planning can be defined as a rational approach to decision making. Urban and regional planning is intended to make it possible to evaluate proposals for physical, social, and economic development against a backdrop of a comprehensive view of the future. To be useful, such a comprehensive view must be realistic politically, financially, and administratively.

Thus, the planning concentration is designed to provide general information about the profession, the subject matter of planning, the theory of planning, and its application to urban problems.

Public Policy and Social Change Concentration

The growth of American urban communities is to a large extent the result of public policy. Laws made at all three levels of government influence the physical, social, and economic character of the metropolis. For this reason, a concentration devoted to the study of public policy (how it is made, its implementation, its impact) is central to an undergraduate urban studies curriculum. Moreover, since the study of urban areas includes a focus on social inequality, a knowledge of public intervention aimed at improving social conditions is essential.

Most students, upon graduation, will either work in government or for a private agency whose budget and programming are largely shaped by government. Consequently, packaging courses in a fashion that provides students with an understanding of the political environment and community ethos in which they will work, the administrative machinery (including government budgeting procedures), and government policy as it affects such matters as social interaction, housing, and transportation, provides an integrated education that is both broad and focused.

Public Management Concentration

The activities carried out by a public manager are pivotal to a city's administration. Unless they are performed effectively, other activities are jeopardized. In crises, people look to urban managers and expect a quick and sure response.

In preparation for this career, the public management concentration achieves an understanding of management tools and relates these tools to fiscal areas and political boundaries of government. Emphasis is placed upon the manager as a public decision maker. Special attention is placed upon the concepts and practices of management, evaluation, policy analysis, governmental fragmentation, and budgeting. The concentration will prepare the student for entry-level positions in government or graduate study in the public management area.

Degree Requirements

Bachelor of Science in Urban Studies. The Bachelor of Science in Urban Studies requires 120 credits, including 36 credits in urban studies and planning courses. The program is designed so that students may enter as late as their junior year. **Majors are required to complete USP 242 Computer Applications in Community Analysis and a foreign language through the elementary level (102) by course or placement. Students must also complete STA 210 Basic Practice of Statistics prior to USP 242 as part of the General Education Mathematical Sciences requirement.** Students majoring in urban studies may not use USP 316 Urban Life in Modern America toward the major.

Qualified seniors are allowed to enroll in most 500-level courses but should consult their adviser before registering to secure permission of the instructor.

Students with a minimum 2.5 GPA may apply for participation in the Urban Government Internship Program which provides an opportunity to work within the Richmond area on urban and regional problems. In general, students may not exceed 48 credit hours of urban studies courses. However, those students who choose a specific concentration and wish to participate in the internship may exceed this maximum by six credit hours.

All students must successfully complete the following courses:

USP 245 Housing and Community Revitalization
 USP/GEO 302 Land Use Capability
 USP 304 Urban Social Systems
 USP/GEO 306 The Urban Economic Base
 USP 310 Introduction to Public Planning
 USP/GEO 313 Urban Research and Field Methods
 USP 322 Urban Finance
 USP 413 Policy Implementation
 USP 440 Senior Seminar: The Good City
 USP 541 Urban Public Policy-Making Processes

All students must also successfully complete one course from the concentration in environment, and one course from the concentration in planning. These courses are:

Environment (choose one)
 USP/ENS 331 Environmental Systems
 USP/ENS/GEO 332 Environmental Management

Planning (choose one)
 USP 261 Design of the City
 USP/GEO/INT 340 World Cities Outside of North America

To complete a concentration, students must complete successfully three additional courses within that concentration. The concentration in information systems requires four courses. All courses marked with an asterisk (*) are required for that concentration. For those students pursuing a generalized course of study, as well as those within specific concentrations, electives must be selected with the assistance of a faculty adviser so that individual programs will form a coherent body of knowledge in urban studies.

Environment

USP 240 Introduction to Historic Preservation
 USP 261 Design of the City

USP/ENS 331 Environmental Systems*
 USP/GEO/ENS 332 Environmental Management*
 USP 493 Urban Government Internship
 USP/GEO 521 Cartography and Air Photo Interpretation
 USP 525 Site Planning

Information Systems

BUS 358 Introduction to Structured Programming*
 BUS 360 Business Information Systems*
 BUS 362 Computer Hardware and Software*
 USP/GEO 521 Cartography and Air Photo Interpretation*

Planning

USP 240 Introduction to Historic Preservation
 USP 245 Housing and Community Revitalization
 USP 261 Design of the City*
 USP/GEO/INT 340 World Cities Outside of North America
 USP 493 Urban Government Internship
 USP 525 Site Planning
 USP 552 Urban Transportation Systems

Public Policy and Social Change

USP 245 Housing and Community Revitalization*
 USP 261 Design of the City
 USP 413 Policy Implementation*
 USP 493 Urban Government Internship
 USP 552 Urban Transportation Systems

Public Management

POS 331 Public Administration*
 POS 432 Public Bureaucracy*

Open Electives

USP/GEO/INT 340 World Cities Outside of North America
 USP/EUC/INT 350 Culture and Urbanism in Great Cities of the World
 USP 391 Special Topics in Urban Studies
 USP 392 Independent Study
 USP 493 Urban Government Internship
 USP/GEO 513 Planning Graphics
 USP/GEO 521 Cartography and Air Photo Interpretation
 USP 552 Urban Transportation Systems

* Required for option

Minor in Public Management

The minor in Public Management has been created for students in political science and urban studies as well as for any other major. It is designed to develop up-to-date administrative skills and systematic analytical capabilities that will qualify graduates for professional staff positions with local, state or federal agencies and an ultimate career in management and personnel administration.

The minor provides an overview of the field of public management. It acquaints students with the political realities of public management, expands their appreciation of subjective factors in planning and decision making and familiarizes them with psychological and sociological perspectives in management. As a result, the minor is a solid preparation for graduate study in law, public administration, urban planning, public policy, and political science.

The public management minor consists of 18 upper-level credits. All students must take the following courses:

POS 331 Public Administration
 POS 432 Public Bureaucracy
 USP 322 Urban Finance
 USP 413 Policy Implementation

In addition, two of the following electives are required:

POS 329 Intergovernmental Relations
 POS 334 Public Personnel Administration
 USP 541 Urban Public Policy-Making Processes (for POS students)
 OR POS 321 Government and Politics (for USP students)

Substitutions may be arranged with the assistance of the student's adviser.

Minor in Urban Studies

For a minor in urban studies, the following nine credit hours are required: USP 315, 316, and USP 310. An additional nine hours of USP electives are to be taken with the advice and consent of an adviser in this department.

Minor in Geography

The geography minor requires 18 credits. At least six credits must be chosen from upper-level courses. Specializations within the minor are available in physical geography, human geography, and geographic methodology including cartography, air photo interpretation, and geographic information systems.

All students must currently take the following courses:

GEO 203, 203L Physical Geography I, with Lab
 GEO 204, 204L Physical Geography II, with Lab
 GEO 307 or GEO 308 World Regions
 GEO/ANT 311 or GEO/ANT 312 History of Human Settlement

In addition, numerous upper-division electives are available.

Master in Urban and Regional Planning

The Master in Urban and Regional Planning (MURP) was established in 1973 to prepare professional planners for employment in state and local government and private firms. The MURP is a 2-year program that requires 54 semester hours of course work and internship. Accredited by the Planning Accreditation Board, the curriculum provides a grounding in the theory and methods of planning that is balanced between classroom and field experience. Students may choose a broad program in comprehensive planning or elect one of four concentrations:

- Urban Revitalization and Historic Preservation
- Housing and Neighborhood Planning
- Economic Development
- Physical Planning
- Environmental Planning

There is also the opportunity for a joint degree program within the T. C. Williams Law School at the University of Richmond.

See the *Graduate Bulletin* for a more detailed description of this program.

Courses in Geography

GEO 102 Introduction to Cultural Geography. Semester course; 3 lecture hours. 3 credits. An introduction to the way in which man has modified his world, emphasizing the patterns of migration, the liveli-

hood of man, and the environments in which these modifications took place and continue to occur.

GEO 203, 204 Physical Geography. Semester courses; 3 lecture hours. 3, 3 credits. Analysis of the interrelated systems of the earth. First semester: the earth in space, atmosphere, climate, natural vegetation, soils. Second semester: landforms, hydrology, oceanography. Physical Geography Laboratories L203, L204 are optional.

GEO L203, L204 Physical Geography Laboratory. Semester courses; 2 laboratory hours. 1, 1 credit. Pre or corequisite: GEO 203 for L203, GEO 204 for L204. Optional. First semester: the earth in space, map reading, climates, vegetation, soils. Second semester: landforms, geologic maps, hydrology, oceanography.

GEO 302/USP 302 Land Use Capability. Semester course; 3 lecture hours. 3 credits. An introduction to the principles, concepts, and knowledge involved in determining the capacity of land under various conditions to support a variety of uses.

GEO 306/USP 306 The Urban Economic Base. Semester course; 3 lecture hours. 3 credits. Prerequisite: USP 242. Explores the nature of work as it is organized in urban businesses, the interdependence of industries, and the reasons why different cities develop different types of economies. Policies and strategies for developing and maintaining healthy urban economies. Policies and strategies for developing and maintaining healthy urban economies will be discussed in detail. This course is a prerequisite for USP 322 Urban Finance.

GEO 307, 308 World Regions. Semester courses; 3 lecture hours. 3, 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture, and urban conditions. First semester: Anglo-America, Latin America, Western Europe, Eastern Europe, USSR. Second semester: Middle East and North Africa, Africa (south of the Sahara), Indian Subcontinent, China, Japan, Southeast Asia, Oceania.

GEO 311, 312/ANT 311, 312 History of Human Settlement. Semester courses; 3 lecture hours. 3, 3 credits. A cultural geography of man's diffusion over the earth, agricultural and urban systems, exploration, migration and colonization, and changing attitudes toward the environment. First semester: before 1750. Second semester: during and since the Industrial Revolution.

GEO 313/USP 313 Urban Research and Field Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: STA 210. Pre or corequisite: USP 242 or permission of instructor. Methods of data collection, organization, and updating; the use of secondary information; applications of elementary statistical analysis and of graphic and cartographic analysis.

GEO 322 World Political Geography. Semester course; 3 lecture hours. 3 credits. A study of geographic factors in world power and international affairs, including such topics as resources, national unity, boundaries, etc. Specific areas of international tension may also be considered.

GEO 331/ENS 331/USP 331 Environmental Systems. Semester course; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework taking into account the many interactions among environmental systems and between these systems and man.

GEO 332/ENS 332/USP 332 Environmental Management. Semester course; 3 lecture hours. 3 credits. Provides a framework for developing environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

GEO 333/AAS 333 Geography of Africa. Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, boundaries, trade, and cultural groupings of the African continent.

GEO 334 Regional Geography of _____. Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as

North America, Europe, Latin America, the Middle East and India, the USSR, and Eastern Europe. See the *Schedule of Classes* for specific region to be studied each semester.

GEO 340/INT 340/USP 340 World Cities Outside of North America. Semester course; 3 lecture hours. 3 credits. An examination of urban habitats in a variety of geographical regions, with emphasis on their differences and their common experiences.

GEO 391 Topics in Geography. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits. An in-depth study of a selected topic in geography. See the *Schedule of Classes* for specific topics to be offered each semester.

GEO 401/ENS 401 Meteorology and Climatology. Semester course; 3 lecture hours. 3 credits. Prerequisite: GEO 203 or a physical science sequence or permission of instructor. A basic, semiquantitative course in the elements of weather and climate, their driving forces, and their spatial and temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather, and climate.

GEO L401/ENS L401 Meteorology and Climatology Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: EAS 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

GEO 411/ENS 411 Oceanography. Semester course; 3 lecture hours. 3 credits. Prerequisite: GEO 203 or PHY 101 or a natural science sequence or permission of instructor. A basic course in the physical, chemical, and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments, and ecology.

GEO 451 Cultural Geography of Virginia. Semester course; 3 credits. Examination of various cultural geographic factors, focusing on such subjects as contemporary or historical settlement patterns, rural and/or urban development, ethnic groups and migration patterns, or environmental problems. May include field trips.

GEO 460 Richmond and its Environs. Semester course; 4 field/lecture hours. 3 credits. Prerequisite: Upper-division standing or permission of instructor. An analysis through lectures, discussions, and field trips of Richmond's physical characteristics (its site); relationship with the counties surrounding it (its situation).

GEO 492 Independent Study. Semester course; variable; 2-4 credits per semester. Maximum total of six credits. Open generally only to students of junior or senior standing. Determination of the amount of credit and permission of instructor and department chair must be obtained prior to registration for the course. To be eligible, students must have 12 credits in geography or in geography and geology.

GEO 521/USP 521 Cartography and Air Photo Interpretation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the preparation and interpretation of data in cartographic form. Included is the methodology of map making, introductory photogrammetry, object recognition, stereograms, area measurement, and mapping from aerial photos.

Courses in Urban Studies and Planning

USP 116 Introduction to the City. Semester course; 3 lecture hours. 3 credits. Introduction to the various theories of urbanism and attempt to offer solutions to the problems of urban life in modern civilization. The course will survey the major works of those who have studied cities or offered solutions and alternatives to existing urban structures. The works of noted social reformers, political analysts, economists, and architects as well as urban planners will be examined through lectures, readings, films, slides, discussions, and field trips (when feasible).

USP 240 Introduction to Historic Preservation. Semester course; 3 lecture hours. 3 credits. This course provides a broad overview of the field of historic preservation and the principal issues facing the historic preservation movement today. Students examine the goals, values, and

techniques of preservationists; federal, state, and local preservation policies and programs; and the sometimes conflicting roles of architects, historians, archaeologists, planners, bureaucrats, minorities, and developers in the preservation movement. Field trips and guest lectures by professionals engaged in public and private preservation efforts highlight major concepts and topics presented in course readings and class discussion.

USP 242 Computer Applications in Community Analysis. 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: STA 210. Practical introduction to computer softwares and techniques used in urban analysis.

USP 245 Housing and Community Revitalization. Semester course; 3 lecture hours. 3 credits. The purpose of this course is to examine housing issues as a major determinant of the make-up and the quality of community life in modern American society. Attention is given to the public and private forces that influence various components of the housing issue, such as: demand for housing; housing availability to various economic and social groups; housing design and quality (including new construction, rehabilitation, historic preservation, and adaptive reuse), housing finance, and the relationship of housing to planning in metropolitan areas.

USP 261 Design of the City. Semester course; 3 lecture hours. 3 credits. Architecture, space, and activities play a special role in the overall design of the city. These elements are analyzed to understand their interrelationships and importance to a city's visual character. Architectural styles, civic art, effects of space on the individual, and methods for designing cities will be discussed. The class is for those who want to understand urban design elements and for those who will be involved in city design.

USP 302/GEO 302 Land Use Capability. Semester course; 3 lecture hours. 3 credits. An introduction to the principles, concepts, and knowledge involved in determining the capacity of land under various conditions to support a variety of uses.

USP 304 Urban Social Systems. Semester course; 3 lecture hours. 3 credits. A study of the growth and development of neighborhoods, cities, and metropolitan systems. Analyzes origins of community interests and factors that affect the ability of communities to further their interests. Particular attention is given to how patterns of service delivery and the placement of public facilities affect community interest and whether federal or municipal departments are able to set adequate community service standards.

USP 306/GEO 306 The Urban Economic Base. Semester course; 3 lecture hours. 3 credits. Prerequisite: USP 242. Explores the nature of work as it is organized in urban businesses, the interdependence of industries, and the reasons why different cities develop different types of economies. Policies and strategies for developing and maintaining healthy urban economies will be discussed in detail. This course is a prerequisite for USP 322 Urban Finance.

USP 310 Introduction to Public Planning. Semester course; 3 lecture hours. 3 credits. Introduction to theory and practice of governmental planning in the U.S. with emphasis on urban and regional planning. Survey of the history of urban planning, the current planning practice at the local level, and the ethical responsibilities of planners.

USP 313/GEO 313 Urban Research and Field Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: STA 210. Pre or corequisite: USP 242 or permission of instructor. Methods of data collection, organization, and updating; the use of secondary information; applications of elementary statistical analysis and of graphic and cartographic analysis.

USP 315 The Evolution of American Cities. Semester course; 3 lecture hours. 3 credits. A general survey of how cities developed in the United States and the factors which contributed to the process of urbanization. Emphasis is placed on the public attitudes and values that have dominated particular periods of history and how these values affected the efforts to urbanize. The American city is examined as a vital force in the economic, social, and political development of modern America, as the major location for conflict between people of all

persuasions, and as the home of much of what is meant by American "civilization".

USP 316 Urban Life in Modern America. Semester course; 3 lecture hours. 3 credits. Examines how a modern city functions, the public services rendered within the city, and the impact of public policy on the city. The city is treated as a system consisting of economic, social, and political activities that influence and are influenced by the physical/demographic environment. Each activity is studied separately with the cause-effect relationships among the activities highlighted by an analysis of public service delivery and, more generally, urban public policy. Restricted to nonmajors.

USP 322 Urban Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: USP 306. Treats the local government from a practical management perspective as an organization in a political-economic environment. The nature of city expenditures and sources of revenues are explored. Budgeting and taxing decision-making processes are explored in depth. Economic impacts of these decisions on citizens are analyzed and implications for practice drawn.

USP 331/ENS 331 Environmental Systems. Semester course; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework taking into account the many interactions among environmental systems and between these systems and man.

USP 332/ENS 332/GEO 332 Environmental Management. Semester course; 3 lecture hours. 3 credits. Provides a framework for developing environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

USP 340/GEO 340/INT 340 World Cities Outside of North America. Semester course; 3 lecture hours. 3 credits. Examines the role of cities in the development of a variety of geographical regions outside of North America. Consists of a broad overview of the historical evolution of cities, their internal structure and relation to the world system and urban problems.

USP 350/INT 345/EUC 345 Culture and Urbanism in Great Cities of the World. Semester course; 3 lecture hours. 3 credits. May be repeated under different topics for a total of six credits. Prerequisite: Sophomore standing or permission of instructor. An interdisciplinary course with a dual focus on the origin, expansion, and significance of a city and the specifics of its urban culture. Particular emphasis will be placed on relating the physical, social, and economic aspects of the city's growth and development to the cultural expression of urbanism.

USP 391 Special Topics in Urban Studies. Semester course; 1, 2, or 3 credits. Students will have an opportunity to examine in detail some questions of significance. Due to the changing subject matter to be treated in this course, permission of the instructor is required. See the *Schedule of Classes* for the specific topic to be offered each semester.

USP 392 Independent Study. Semester course; 1-3 lecture hours. 1 to 3 credits. Under supervision of a faculty adviser, who must approve the student taking the course, a student studies a topic of interest. Junior or senior standing is required.

USP 397, 398 Independent Study. Semester courses; 2 or 3 lecture hours. 2 or 3 credits. Under supervision of a faculty adviser, whose consent is required to register, study a topic of concern to the student. Junior or senior standing is required. Examines the role of cities in development of a variety of geographical regions outside of North America. Consists of a broad overview of the historical evolution of cities, their internal structure, and relation to the world system.

USP 413 Policy Implementation. Semester course; 3 lecture hours. 3 credits. An examination of the administrative setting of government and its policy impacts on public programs, policy design and redesign, and evaluation and monitoring.

USP 440 Senior Seminar: The Good City. Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior standing. Readings, discussion,

and individual research into "the good city" as it is expressed theoretically and practically. Perspectives from the arts and humanities, as well as the social sciences, are brought to bear on the normative question, "What is the good city?" A research project is a requirement.

USP 493 Urban Government Internship. Semester course; 150 clock hours in a local legislative body or administrative agency. 3 credits. May be repeated once for a maximum total of six credits or 300 clock hours. Approval of selection committee required. Under supervision of a faculty committee and a field supervisor, the internship is designed to present opportunities for qualified students to acquire exposure to aspects of public decision-making processes by participation in (1) local legislative bodies of the Richmond metropolitan area; (2) local and regional administrative agencies, commissions, and boards; and (3) private organizations that have demonstrated interest in local government and politics.

USP 521/GEO 521 Cartography and Air Photo Interpretation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the preparation and interpretation of data in cartographic form. Included is the methodology of map making, introductory photogrammetry, object recognition, stereograms, area measurement, and mapping from aerial photos.

USP 525 Site Planning and Graphics. Semester course; 3 lecture hours. 3 credits. Addresses the environmental impacts and capacity of environmental systems in relation to the site requirements of various urban and rural situations. Introduces the use of graphics as an aid in presenting and analyzing planning and design ideas, maps and plans.

USP 541 Urban Public Policy-Making Processes. Semester course; 3 lecture hours. 3 credits. Discusses the politics of urban life. Examines the physical, demographic and economic environments in which conflict resolution occurs, as well as the actors on the local, state, and federal levels that participate in the political process.

USP 552 Urban Transportation Systems. Semester course; 3 lecture hours. 3 credits. An examination of urban requirements for mobility, transportation systems, problems of traffic, mass transit, and new concepts for moving people and goods.

Minor in Women's Studies

Diana H. Scully

Professor of Sociology and Anthropology and Program Director (1976) BA 1970, MA 1972 and PhD 1977 University of Illinois, Chicago Circle

Women's studies is the Interdisciplinary, cross-cultural examination of women's perspectives and experiences.

The minor in women's studies shall consist of 18 credits. Students are required to take the following: (1) WST 201, Introduction to Women's Studies; (2) a feminist theory course; and (3) a course addressing racial/cultural diversity. The remainder of courses are electives.

Courses in Women's Studies

WST 201 Introduction to Women's Studies. Semester course; 3 lecture hours. 3 credits. An interdisciplinary and cross-cultural introduction to the perspectives and core concerns of women's studies.

WST 236/ENG 236 Women in Literature. Semester course; 3 lecture hours. 3 credits. An introduction to literature by and/or about women.

WST 301 Feminist Theory. Semester course; 3 lecture hours. 3 credits. This course examines the major theoretical traditions and thinkers of feminist theory from the works of early liberal feminists like Wollstonecraft to the present thought of postmodern and lesbian feminists like Wittig. It examines arguments about human nature, the origins and effects of patriarchy, the conflict between equality and gender difference, and feminist critiques of traditional theories of knowledge.

WST 304/SOC 304/ANT 304 The Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or ANT 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

WST 305/AAS 305/SOC 305 Sociology of the Black Family. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

WST 316/POS 316 Women and the Law. Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics, and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights of women of color and lesbians, reproductive rights, women criminals, and women in the legal profession.

WST 318/AAS 318/POS 318 Politics of Race, Class and Gender. Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States.

WST 333/SOC 333 Sociology of Sex and Gender. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or permission of instructor. A cross-cultural and evolutionary exploration of the interdependence between male and female roles in the following social institutions: family, law, economics, politics, religion, education, and health.

WST 334/SOC 334 Sociology of Women. Semester course; 3 lecture hours. 3 credits. Prerequisite: SOC 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized.

WST 335/PSY 335 Psychology of Women. Semester course; 3 lecture hours. 3 credits. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse.

WST 339, 340/HIS 339, 340 History of Women in Europe. Semester courses; 3 lecture hours. 3, 3 credits. A history of European women from the Greeks to the contemporary world. A major focus of both courses will be primary sources by and about women. First semester: antiquity to the Enlightenment. Second semester: French Revolution to the present.

WST 341/HIS 341 American Women's History. Semester course; 3 lecture hours. 3 credits. Through reading, lecture, and discussion, this course analyzes historical changes in the social, cultural, political, and economic position of women in America over the past three centuries. It includes such topics as the differences and similarities of women's experiences across lines of class, race, and ethnicity, the struggle for suffrage and social reform, shifting gender roles, and changing employment opportunities.

WST 382/CRJ 382 Women in the Justice System. Semester course; 3 lecture hours. 3 credits. Surveys the special situation of women in the justice system as offenders, as victims, and as professional practitioners. Applicable laws and public policy are studied in detail. Issues are punctuated by field trips to juvenile/adult programs and institutions.

WST 384/ENG 384 Women Writers. Semester course; 3 lecture hours. 3 credits. A study of selected literature written by women and about women writers. May be repeated once when different group writers are studied.

WST 390/AAS 390/HIS 390 Africa and the Americas: Slavery, Gender, and Race. Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

WST 391 Topics in Women's Studies. Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth examination of specialized areas of interest in women's studies.

WST 452/ENG 452/LIN 452 Language and Gender. Semester course; 3 lecture hours. 3 credits. A study of relationships between the ways women and men use language, relationships between language and power, and ways women and men use language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

WST 457/ARH 457 Women, Art and Society. Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art, and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?"

WST 492 Independent Study. Semester course; variable credit. Maximum of four credits per semester; maximum total of four credits in all independent study courses. Open generally only to students of junior and senior standing who have acquired at least 12 credits in women's studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be obtained prior to registration for the course.

Preparation for Professional Studies in the Health Sciences

Arthur J. Seidenberg

Assistant Dean for Undergraduate Academic Affairs and Coordinator of Pre-Health Sciences Advising and Associate Professor of Biology (1968) BS 1961 Brooklyn College; PhD 1969 University of Illinois

The College of Humanities and Sciences provides preparatory programs for a number of health sciences programs offered by the Medical College of Virginia (MCV) Campus. The programs are medicine, dentistry, dental hygiene, clinical laboratory sciences, radiation sciences, nursing, occupational therapy, pharmacy, and physical therapy. Pre-veterinary medicine advising is available through the biology department; pre-optometry through the dean's office of the College of Humanities and Sciences.

A Guaranteed Admission program exists between the College of Humanities and Sciences and the MCV Campus of VCU. This program entitles academically superior high school seniors guaranteed admission to the professional programs mentioned previously.

The Guaranteed Admission program is only open to high school seniors whose SAT scores are at least 1270. A detailed description of this program appears under the "Honors Program" heading.

Most students enrolled in a pre-health sciences program in the College of Humanities and Sciences will apply to one of the MCV Campus professional programs. Unless informed otherwise by the student, College of Humanities and Sciences' advisers will help the student prepare an academic program that will meet the requirements of the MCV Campus professional programs. However, since more qualified students apply to the MCV Campus professional programs than can be accommodated, students are encouraged to apply to

other professional schools and to use their elective courses to meet requirements of those institutions.

Students are also advised to plan alternative career choices in the event they are not accepted into a professional program. This is especially true for students enrolled in a two-year, pre-health sciences program.

Early preparation in meeting the requirements of the alternate major through judicious selection of electives, enables the student to make a smooth transition from a pre-health sciences program to a baccalaureate program.

Virginia residency may be a factor in admission to the MCV Campus health sciences program. For more information about residency, contact the appropriate admissions officer on the MCV Campus.

Preparation for the Study of Medicine and Dentistry Pre-Medicine (PMD) and Pre-Dentistry (PDT)

Pre-Medical Advisory Committee: Charles R. Blem, Leann B. Blem, Carolyn M. Conway, Robert Fisher, John J. Hartnett, Todd Houston, Wendy L. Kliever, Suzanne M. Ruder, Arthur J. Seidenberg

Pre-Dental Advisers: Faculty in the Biology and Chemistry Departments

Leaders in medical and dental education encourage students planning to enter these professions to obtain a broad background in the liberal arts, with a study of not only sciences, but the humanities and social sciences, as well. The prospective student should check with the intended school of medicine or dentistry for specific requirements.

Like many schools of medicine, the School of Medicine on the MCV Campus requires a minimum of three years (90 semester hours or their equivalent) in an accredited college or university. But preference is given to candidates who earn a baccalaureate degree prior to the beginning of medical school.

Biological science, general chemistry, organic chemistry, English, mathematics, and physics are required for admission to the School of Medicine at VCU. General physiology, genetics, calculus, and behavioral sciences, though not required, are strongly recommended for the pre-medical student.

Like other schools of dentistry, the School of Dentistry on the MCV Campus requires a minimum of 90 credits (or equivalent) taken in an accredited college or university. Biology, general chemistry, organic chemistry, mathematics, physics, and English are generally required for admission to the School of Dentistry at VCU. Other courses, such as those in the behavioral sciences and courses involving psychomotor skills are strongly recommended.

Programs of Study. Admission to and completion of a pre-medical or pre-dental program offered by the College of Humanities and Sciences does not constitute admission to VCU's School of Medicine or School of Dentistry. The student must apply separately to the medical or dental school of his or her choice at the appropriate time.

A student entering the College of Humanities and Sciences with an interest in preparing for medical or dental school should declare an academic major while also indicating a pre-medical or pre-dental advising

track. The classification pre-medical or pre-dental exists to identify the student's career interests, but the student does not earn a pre-medical or pre-dental degree.

For students who are "undeclared" about an academic major initially, the students will clarify their academic interests through regular conversations with their advisers. The students will declare a major in one of the regular four-year degree programs offered by the College of Humanities and Sciences. At the same time, the student will complete the necessary prerequisites for application for admission to the medical or dental school of his or her choice.

Pre-medical and pre-dental students are encouraged to major in fields of greatest interest to them. Students need not major in a science area. In fact, many non-science majors achieve high-acceptance rates into medical and dental schools.

Certain curricula in the College of Humanities and Sciences allow a student to plan a program for entry into medical or dental schools which accept students after completion of three years of successful undergraduate work.

The University will award a BS degree to a student who has successfully completed the first year of an accredited medical or dental school, provided he or she has completed all the general requirements for the College of Humanities and Sciences and the requirements in the major. Successful completion of the first year of medical or dental school is accepted as 30 elective credits toward the student's total hours.

Preparation for the Study of Veterinary Medicine (PVT)

Arthur J. Seidenberg

The Bachelor of Science in chemistry and the Bachelor of Science in biology degree programs offered in the College of Humanities and Sciences provide excellent opportunities to complete the necessary prerequisites for application to a veterinary school.

Preparation for the Study of Optometry (POP)

Arthur J. Seidenberg

The Bachelor of Science program offered on the Academic Campus provides excellent opportunities to complete the necessary prerequisites for application to optometry school.

Prospective students are encouraged to pursue a broad background in liberal arts, including sciences, humanities, and social sciences. The prospective student should check with the intended school of optometry for its specific requirements.

Many schools of optometry require a minimum of 90 credits (or their equivalent) in an accredited college or university, but preference is given to candidates who earn a baccalaureate degree prior to the beginning of optometry school. Biological science, general chemistry, organic chemistry, physics, mathematics, English, and general psychology are generally required for admission to most optometry schools.

Preparation for the Study of Dental Hygiene (PDH)

Arthur J. Seidenberg

The curriculum in pre-dental hygiene offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the Bachelor of Science degree program in dental hygiene offered by the School of Dentistry on the MCV Campus. Students intending to apply to the junior- and senior-year professional program at another institution should consult that institution's bulletin for specific prerequisites.

Admission to and satisfactory completion of the two-year preparatory program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of admission, the student must apply separately to that professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	<i>Credits</i>
ENG 101-200 Composition and Rhetoric (ENG 200 taken in second year)	6
STA 210 Basic Practice of Statistics*	3
CHE 101,L101 General Chemistry and Laboratory OR CHE 103,L103 Introduction to Modern Chemistry and Laboratory	5, 4
BIO 101, L101 Life Science and Laboratory	4
BIO 205,L205 Basic Human Anatomy and Laboratory	4
BIO 206, L206 Human Physiology and Laboratory	4
BIO 209, L209 Medical Microbiology and Laboratory	4
PSY 101 Introduction to Psychology	4
SOC 101 General Sociology	3
SPE 121 Effective Speech	3
Approved Electives	21
	60 or 61

* Depending on results of Mathematics Placement Test students might also have to take MAT 151.

Preparation for the Study of Clinical Laboratory Sciences (PCL)

Advisers: Faculty of the Chemistry Department

The curriculum in pre-clinical laboratory sciences offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the Bachelor of Science degree program in clinical laboratory sciences offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses. Any student who wishes to transfer to a school other than VCU must transfer to a school that will confer a degree at the completion of the fourth year of study.

Admission to and satisfactory completion of the two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	<i>Credits</i>	
	<i>1st Sem.</i>	<i>2nd Sem.</i>
First Year		
CHE 101-102 General Chemistry	4	4
CHE L101-L102 General Chemistry Laboratory I, II	1	1
ENG 101 Composition and Rhetoric	3	-
CLS 201 Introduction to Clinical Laboratory Sciences	1	-
MAT 151 Precalculus Mathematics	3	-
Humanities or Social Science Electives	3	6
BIO 101 Life Science	-	3
BIO L101 Life Science Laboratory I	-	1
	15	15
Second Year		
ENG 200 Composition and Rhetoric	3	-
CHE 309 Quantitative Analysis	-	4
BIO 205,L205 Basic Human Anatomy and Laboratory	4	-
BIO 206, L206 Human Physiology and Laboratory	-	4
Humanities Elective	3	-
Social Science Elective	3	-
Visual or Performing Arts Electives	-	3
	3	3
	16	14

If a student does not qualify to take CHE 101 and L101 in the first semester because of a low score on the Mathematics Placement Test or because of placement in CHE 100 Introduction to Chemistry (needed for additional chemistry preparation), the student should add BIO 109, L109 General Biology and Laboratory, in the fall semester and plan to take CHE 102 and L102 the following summer.

Preparation for the Study of Nursing (PNR)

Gail Turner

Coordinator

Advisers: Leann Blem,Rhoda Perozzi,Arthur J. Seidenberg

The curriculum in pre-nursing offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the Bachelor of Science degree program in nursing offered by the School of Nursing on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisites.

Admission to and satisfactory completion of the one or two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the professional program on the MCV Campus.

In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Two nursing tracks are available. In the first program, students who start pre-nursing at VCU as freshmen must apply in September of their first year for entrance to the school of nursing. Students receive a decision during the following spring semester.

If accepted, students begin study in the School of Nursing in the fall semester of their sophomore year. The nursing program in this track takes three years to complete. Students in this track complete approximately 30 of the 60 credits listed in the two-year program during their freshman year. The remaining arts and sciences credits can be completed while the student is enrolled in the School of Nursing – normally during the sophomore year.

The curriculum list outlines the 60 credits needed, approximately 30 of which are taken during the freshman year.

The second program is for students who transfer to VCU to complete the pre-nursing requirements. These students apply in September of the year prior to desired matriculation. Students receive a decision during the following spring semester. If accepted, students begin study in the School of Nursing in the summer. This track takes two years and one summer to complete. Students in this track complete all the credits listed below prior to matriculation in the School of Nursing.

	<i>Credits</i>
ENG 101-200 Composition and Rhetoric (ENG 200 taken in second year)	6
Humanities Electives*	12
PSY 101 Introduction to Psychology	4
SOC 101 General Sociology	3
PSY 304 Life Span Developmental Psychology	3
MAT 131 Introduction to Contemporary Mathematics OR STA 208 Statistical Thinking (STA 208 preferred)	3
Science Elective†	4
BIO 101,L101 Life Science and Laboratory	4
BIO 205, L205 Basic Human Anatomy and Laboratory	4
BIO 206,L206 Human Physiology and Laboratory	4
BIO 209,L209 Medical Microbiology and Laboratory	4
BIO 217 Nutrition	3
Visual or Performing Arts	3
Elective	3
	60

* One course in philosophy is required

† If high school chemistry (with laboratory) with a grade of "C" or better has not been completed, one semester of chemistry with laboratory must be taken. If high school chemistry with a grade of "C" or better has been completed, choose from: BIO 102 and L102, BIO 103 and L103, CHE 103 and L103, PHY 101 and L101, or PHY 201 and L201.

Preparation for the Study of Occupational Therapy (POC)

Arthur J. Seidenberg

The curriculum in pre-occupational therapy offered by the College of Humanities and Sciences meets the mini-

imum academic requirements for the bachelor of science degree program in occupational therapy offered by the School of Allied Health Professions on the MCV Campus.

This program is accredited by the American Occupational Therapy Association. Students intending to apply to the junior- and senior-year professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record and demonstrated aptitude and interest. A personal interview is also part of the admission procedure.

	<i>Credits</i>	
	1st Sem.	2nd Sem.
First Year		
ENG 101 Composition and Rhetoric	3	-
PSY 101 Introduction to Psychology	4	-
SOC 101 General Sociology	3	-
BIO 101 Life Science	3	-
BIO L101 Life Science Laboratory	1	-
BIO 205, L205 Basic Human Anatomy and Laboratory OR BIO 206,L206 Human Physiology and Laboratory	-	4
MAT 131 Introduction to Contemporary Mathematics AND STA 208 Statistical Thinking OR STA 210 Basic Practice of Statistics	3	3
Humanities	-	3
Electives	-	6
	17	16
Second Year		
ENG 200 Composition and Rhetoric	-	3
PSY 304 Life Span Developmental Psychology	3	-
PSY 407 Psychology of the Abnormal	3	-
Psychology Elective	-	3
BIO 205,L205 Basic Human Anatomy and Laboratory OR BIO 206, L206 Human Physiology and Laboratory	4	-
Sociology elective	3	-
Electives	2-3	9
	15-16	15

These courses are considered minimum requirements. Students are encouraged to pursue the further study of biology, psychology, and sociology. Students are also encouraged to take mathematics and statistics courses to increase their curricular options at the end of their preparatory program.

Preparation for the Study of Pharmacy (PPH)

Advisers: Humanities and Sciences Advising Center

The curriculum in pre-pharmacy offered by the College of Humanities and Sciences meets the minimum academic requirements needed for application to many

professional programs, including the doctoral degree program in pharmacy offered by the School of Pharmacy on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Credits earned by examination (AP, CLEP, and so on) will not count toward the 74-75 credits required for admission to the MCV Campus' School of Pharmacy. However, the content area covered by the examination need not be repeated. Electives may be substituted for the needed credits.

Admission to and satisfactory completion of the two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the final four years of the doctoral program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the school's admissions committee.

	<i>Credits</i>
BIO 101,L101 Life Science and Laboratories	4
BIO 102,L102 Science of Heredity and Laboratory	5
ENG 101-200 Composition and Rhetoric (ENG 200 taken in second year)	6
MAT 151 Precalculus Mathematics	
OR STA 210 Basic Practice of Statistics	3-4
MAT 200 Calculus with Analytic Geometry	4
CHE 101-102 General Chemistry	8
CHE L101-L102 General Chemistry Laboratory I,II	2
PHY 201-202 General Physics	8
CHE 301-302 Organic Chemistry	6
CHE L301-L302 Organic Chemistry Laboratory I,II	4
SPE 121 Effective Speech	3
Ethics	3
Liberal Arts electives*	18
	74-75

* The liberal arts electives should represent a well-balanced program of courses in the fine arts, humanities, and social sciences. Choose from ANT, ARH, ECO, HIS, PHI, POS, PSY, RST, SOC, SSC, foreign languages, literature or music appreciation. Students may not present studio, activity (PE), business, mathematics, or science courses.

If a student does not qualify to take CHE 101 and L101 in the first semester because of a low score on the Mathematics Placement Test or because of placement in CHE 100 Introduction to Chemistry (needed for additional chemistry preparation), the student should add a three-credit elective in the fall semester and plan to take CHE 102 and L102 in the summer or the following fall semester.

Since this program requires students to take 17-18 credits every semester in order to finish the course work in four semesters, they should consider taking some courses during the summer between their freshman and sophomore years. Physical education credits cannot be used to meet the above prerequisites.

Preparation for the Study of Physical Therapy (PPT)

Advisers: Bonnie L. Brown, Joseph P. Chinnici, Arthur J. Seidenberg, Jennifer K. Stewart

The curriculum in pre-physical therapy offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the physical therapy program offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the three-year (90 credits) preparatory program offered by the College of Humanities and Sciences does not constitute admission to the professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the School of Graduate Studies, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into this MCV Campus program is determined by the departmental admissions committee. The student's scholastic record and professional suitability are considered by the committee. Even before admission, the student is expected to have knowledge of the practice and goals of the physical therapy profession.

	<i>Credits</i>
ENG 101-200 Composition and Rhetoric* (ENG 200 taken in second year)	6
BIO 101, L101 Life Science and Laboratory†	4
BIO 102, L102 Science of Heredity and Laboratory†	5
CHE 101-102 General Chemistry ^Δ	8
CHE L101-L102 General Chemistry Laboratory I,II ^Δ	2
BIO 206,L206 Human Physiology and Laboratory	4
PHY 201-202 General Physics ^Δ	8
MAT 151 Precalculus Mathematics ^Δ OR MAT 200 Calculus with Analytic Geometry ^Δ	4
STA 210 Basic Practice of Statistics	3
PSY 101 Introduction to Psychology ^Δ	4
Psychology Elective	3
Social Sciences Electives ^Δ	6
Humanities Elective	3
Approved Electives (minimum)	30
	90

* AP credits may be substituted for up to three credits.

† Students should take BIO 151,L151,152,and L152 if they plan to major in biology. AP credits may not be used to fulfill the biology requirement.

^Δ AP credits may be used to satisfy requirement.

To complete the social sciences, psychology, and humanities requirements, students are encouraged to take courses in child, adolescent, or abnormal psychology; personality, developmental, or psychology of adjustment; sociology, anthropology, economics, history, philosophy, logic, counseling, and human relations.

To complete the total requirements, students are encouraged to choose courses from computer science, embryology, histology, comparative anatomy, vertebrate or human anatomy, kinesiology, physiology, foreign languages, and physical education courses that deal with an

analytical approach to human movement or motor learning. At least eight hours of electives must be upper-level courses. A "D" grade in any of the required courses shown above is not acceptable toward admission.

Preparation for the Study of Radiation Sciences (PRA)

Leann Blem
Coordinator

The curriculum in pre-radiation sciences meets the minimum academic requirements for the bachelor of science degree program in clinical radiation sciences with concentrations in radiography or nuclear medicine technology or radiation therapy offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the one-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the sophomore year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	<i>Credits</i>
ENG 101-200 Composition and Rhetoric	6
MAT 151 Precalculus Mathematics	4
BIO 101,L101 Life Science and Laboratory	4
BIO 205, L205 Basic Human Anatomy and Laboratory	4
BIO 206, L206 Human Physiology and Laboratory	4
PSY 101 Introduction to Psychology	4
PHY 201-202 General Physics	8

34

Preparation for Professional Studies in Law (PLW)

Advisers: Husain Mustafa, Department of Political Science; Carol D. Rasnic, Department of Marketing and Business Law; James L. Hague, Department of Criminal Justice

Few law schools list specific undergraduate courses as prerequisites for admission, thus, the student considering law school can major in virtually any department in the College of Humanities and Sciences, the School of Business, or the School of Community and Public Affairs.

However, students preparing for law school are encouraged to obtain a broad liberal arts background with emphasis on the social sciences, philosophy, and English. Students interested in law school may decide to complete the philosophy of law minor. This minor program is described under the Department of Philosophy and Religious Studies.

Pre-law advisers maintain continual contact with law school admissions offices and will assist any interested student with questions about curriculum, financial assistance, application procedure, and the law school admission test (LSAT).

IX

P A R T

School of Allied Health Professions

Cecil B. Drain

Professor and Dean (1993) BSN 1976 University of Arizona; MS 1980 University of Arizona; PhD 1986 Texas A & M University

Delores G. Clement

Associate Professor and Associate Dean (1988) BA 1970 Mount Saint Joseph; MA 1979 Ohio State University; MS 1981 Rush University; DrPH 1988 University of California, Berkeley

Stephen C. Harvey

Assistant Professor and Assistant Dean (1977) MEd 1975 Virginia Commonwealth University

James L. Hevener

Director of Information Systems (1997) ASSO 1996 Shepherd College

Debra A. Ropelewski

Assistant Dean (1983) BS 1982 Virginia Polytechnic Institute and State University; MBA 1988 Virginia Commonwealth University

History

The School of Allied Health Professions was established within the Medical College of Virginia of Virginia Commonwealth University on January 1, 1969.

A fundamental reason for the establishment of the School of Allied Health Professions was to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to the growing need for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy, radiologic technology, and x-ray technicians. A program for nurse anesthesia was inaugurated as a separate department in 1969; an existing educational program in occupational therapy located on the Academic Campus was transferred administratively to the School of Allied Health Professions in 1970; also in 1970, a teaching program in patient counseling formerly based within MCV Hospitals was integrated with the school. Since 1974 a baccalaureate program in radiation sciences, with specific concentrations in education and in administration, has been established. A doctoral program in health services, organization, and research, the first for the School of Allied Health Professions, was introduced in 1982. In 1985 the existing Department of Gerontology was transferred administratively to the School of Allied Health Professions. In June 1988 an executive master's program in health administration was introduced. An entry-level master's degree profes-

sional program in physical therapy was initiated for students matriculating in August 1989. In 1995 the Department of Rehabilitation Counseling was transferred to the School of Allied Health Professions from the School of Community and Public Affairs. A new interdisciplinary, distance-learning doctoral program, the PhD in Health Related Sciences, is scheduled to begin in Fall 1998.

Programs

Departments and programs currently in this school and the degrees or certificates conferred on their graduates are:

School of Allied Health Professions

Doctor of Philosophy in Health Related Sciences

Department of Gerontology

Master of Science

Postgraduate Certificate in Aging Studies

Postgraduate Certificate in Aging Studies and Master of Social Work – offered in conjunction with the School of Social Work

Department of Health Administration

Master of Health Administration

Master of Health Administration/Juris Doctorate – offered jointly with the T. C. Williams School of Law at the University of Richmond

Master of Science in Health Administration (Executive Program)

Doctor of Philosophy in Health Services, Organization, and Research

Department of Clinical Laboratory Sciences

Bachelor of Science in Clinical Laboratory Sciences

Master of Science

Department of Nurse Anesthesia

Master of Science in Nurse Anesthesia

Department of Occupational Therapy

Bachelor of Science in Occupational Therapy

Master of Science in Occupational Therapy

Master of Science

Program of Patient Counseling

Postgraduate Certificate in Patient Counseling

Department of Physical Therapy

Master of Science

Doctor of Philosophy – Physical Therapy track offered in conjunction with the Departments of Anatomy and Physiology, School of Medicine

Department of Radiation Sciences

Bachelor of Science in Clinical Radiation Sciences

Department of Rehabilitation Counseling

Master of Science in Rehabilitation Counseling
Post-Master's Certificate in Professional Counseling

Detailed descriptions of all graduate programs may be found in the *Graduate Bulletin*.

Philosophy

The faculty of the school is committed to offer, through the establishment and maintenance of rigorous standards of excellence, undergraduate and graduate education that will prepare students for professional careers in the several allied health disciplines. Development of professional attitudes, emotional maturity, and ethical behavior are vital components of the educational process. It is essential that students gain a deep respect for the dignity of man and the inherent rights of patients and others who receive services. Programs are designed to include not only the development of skills to assure excellence in quality of health care, but also such factual knowledge and experiences that will provide the basis for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources, and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

Facilities

Departments and programs in the School of Allied Health Professions are housed in the Randolph-Minor Annex, West Hospital Building, Newton House, VMI Building, Lyons Building, Grant House, Samuel Putney House, and McGuire Hall.

Accreditation

Virginia Commonwealth University and its component schools are accredited by the Southern Association of Colleges and Schools, the general accrediting agency for colleges in the region. The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions and the Virginia

Association of Allied Health Professions. All of its programs are approved or accredited by the appropriate national professional or educational organizations.

Licensure/Accreditation

Graduates of most of the programs offered in the School of Allied Health Professions are required or eligible to take national/state certification of licensure examinations. Requirements of licensing and certifying agencies vary. Some licensure and certification agencies consider individuals convicted of a felony ineligible for licensure or certification. For specific information, prospective students should contact the licensure or certification agency for their allied health disciplines.

Student Performance and Behavior

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of each student and practitioner is an undeviating acceptance of a professional attitude and pride that will motivate him/her to adhere to a code of professional ethics and to develop fully the competencies for practice.

Thus, the suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. Standards of conduct are presented in Part IV of this *Bulletin* and relate to the students in the School of Allied Health Professions. To assure a quality of educational and clinical preparation for its graduates, the following statement is also promulgated:

If, in the judgment of the Faculty/Administration of the School of Allied Health Professions, a student is not considered suitable for emotional, professional, or related reasons, the student's academic status may be appropriately altered.

If any questions arise regarding standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

Attendance Regulations

The faculty considers attendance at lectures, laboratories, and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional. The faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the start of each course, the instructor will relate to the class the policy of his or her department concerning attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

Graduate Programs

Graduate degree offerings in the School of Allied Health Professions are designated as basic professional or advanced-level programs. Accreditation requirements for the individual programs preclude the establishment of general school admission prerequisites, registration dates, and course and degree requirements.

It is the intent that the regulations and procedures for each program ensure the selection of applicants whose motivation, ability, character, and health status qualify them to successfully pursue graduate study. Specific information may be found in the *Graduate Bulletin* or is available from the departmental graduate coordinator.

Courses in Allied Health Professions

Nearly all course offerings in the school are provided by departments and programs; however, selected courses considered applicable to many students in these programs have been assigned to the School of Allied Health Professions.

AHP 391 Special Topics. Semester course; 1-4 credits. Prerequisite: Permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses. Offered on undergraduate-level.

AHP 401 Instructional Strategies. Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to learning theory, instructional design, evaluation, and methodology. Emphasis will be placed on the study of applying principles and techniques of teaching in all areas of allied health education.

AHP 425 Economics of Health Care. Semester course; 4 credits. Examines the topic of economics as it affects the field of health information management. Approaches broad economic and financial concepts as applied to policy making in the health care industry. Emphasizes the budget process in health care institutions as it affects individual departments and how it requires accountability of each.

AHP 582 Supervision in the Allied Health Professions. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study of the supervisory process and staff development, training in communication and interpersonal skills, and public relations within the health facility.

AHP 591 Special Topics. Semester course; 1-4 credits. Prerequisite: Permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

AHP 594 Health Education Practicum. Semester course; 1 lecture and 4 laboratory hours. 1-6 credits. Prerequisite: AHP 573. Preparation, presentation, and evaluation of selected educational experiences in the appropriate graduate program. Section 01, General; Section 02, Nurse Anesthesia; Section 03, Medical Technology.

AHP 596 Supervisory and Administrative Practicum in Allied Health Clinics. Semester course; 60 clinical hours per credit. 1-9 credits. Prerequisite: Permission of instructor. The course is designed for the student who will be assuming supervisory and administrative roles. Areas to be covered include clinical personnel management, budgeting and ordering of materials and equipment, consultation with physicians, developing and troubleshooting clinical methods, designing job descriptions, and implementation of quality control programs. Section 01, MT; Section 02, PT.

Department of Clinical Laboratory Sciences

Barbara J. Lindsey

Associate Professor and Department Chair (1975) RT 1971 Mohawk College; MS 1977 Medical College of Virginia of Virginia Commonwealth University

Karselis, Terence C. (1977) *Associate Professor* BS 1967 and MS 1973 State University of New York, Buffalo

Nadder, Teresa S. (1983) *Assistant Professor* BS 1978; MS 1989 and PhD 1998 Medical College of Virginia of Virginia Commonwealth University

Prentice, Katherine A. (1969) *Assistant Professor* BS 1963 Medical College of Virginia of Virginia Commonwealth University; MA 1977 Central Michigan University

Sauer, Ronald L. (1978) *Associate Professor* AA 1968 American River College; BA 1970 California State University; MA 1972 University of California

Sommer, Sandra J. (1974) *Associate Professor* BA 1968 Wartburg College; MS 1974; PhD 1987 Medical College of Virginia of Virginia Commonwealth University

Adjunct Faculty

Frank E. Einsmann
Robin S. Warekois

Deborah D. Sauer

Medical Adviser

Richard A. McPherson

History

Clinical laboratory scientists have been trained at the Medical College of Virginia of Virginia Commonwealth University since 1928. However, the department (formerly school) of Medical Technology was not formally established until 1952 at which time the curriculum included six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. The school offered a certificate and/or degree program which met the requirements of the American Medical Association as implemented through the Board of Schools of the American Society of Clinical Pathologists (ASCP). In 1961-62 the certificate program was discontinued, and all students accepted were required to have previously completed 90 semester hours which included medical technology prerequisites. Upon completion of the course, the students were awarded a bachelor of science degree.

Beginning with the 1974 fall term, the curriculum was expanded to the current two-year program. Students must have completed 60 semester hours, including medical technology prerequisites, before entrance into the baccalaureate program.

The graduate program in clinical laboratory sciences was started in 1967 to provide advanced education for certified medical technologists/clinical laboratory scientists.

In 1981 the program was modified to accept part-time students and in 1985 to allow candidates holding a degree in another area of science to obtain graduate education in clinical laboratory sciences.

In 1994, the department name was changed to Clinical Laboratory Sciences.

Programs

The department offers the following programs of study:

1. **Bachelor of Science Program.** The junior year of the baccalaureate curriculum is devoted to lectures and laboratory exercises in hematology, biochemistry, immunology, immunohematology, clinical microscopy, microbiology, parasitology, instrumentation, and basic concepts/laboratory techniques. During the summer between the junior and senior years, students complete a four-week introductory clinical practicum in a Virginia hospital laboratory. In the senior year, students spend 15 weeks in a clinical rotation at a full-service, technologically-advanced hospital laboratory. In addition to these clinical experiences, the senior year includes advanced courses in each medical science discipline, and instruction in management, education, and computer applications in the clinical laboratory. Certified medical laboratory technicians may partially fulfill course requirements of the program by transfer of credits and/or by successfully completing challenge examinations for certain courses.

Students may be admitted on a part-time basis in both fall and spring semesters. Because of course sequencing, students accepted part-time should contact the department upon notification of acceptance in order that a curriculum plan can be established prior to entrance into the program.

2. **Master of Science Program.** The department offers two graduate-level tracks in clinical laboratory sciences.

The advanced master's track is designed for students holding a baccalaureate degree in clinical laboratory sciences (medical technology) and generalist certification. Candidates may specialize and complete a project or thesis in clinical chemistry, hematology, microbiology, immunohematology, immunology or instrumentation/computer applications. In addition to the basic science requirement, each student will choose an area of secondary emphasis in biomedical research, education, management, or business.

The categorical master's track in clinical laboratory sciences is designed for students with a baccalaureate degree in biology or chemistry. This option provides specialized study, including a clinical practicum, in one of the following areas: clinical chemistry, hematology, microbiology or immunohematology. A project or thesis is required. Upon completion of the program, students are eligible to take a national certification examination in the area in which they performed their concentrated study.

The master's degree requires a minimum of 34 credit hours. For a more detailed description, refer to the *Graduate Bulletin*. To receive a copy, contact: School of Graduate Studies, Virginia Commonwealth University, P.O. Box 843051, Richmond VA 23284-3051 or access the information from the VCU School of Graduate Studies Home Page at <http://www.vcu.edu/gradweb/> - School of Allied Health Professions.

Mission

The Department of Clinical Laboratory Sciences, in concord with the mission statements of the School of Allied Health Professions and the University, provides an environment that nurtures excellence in education, research, and service.

The department provides the student with superior studies in clinical laboratory science, including both theoretical and applied clinical education, and develops problem-solving expertise, leadership capabilities, and communication skills. A mature, responsible approach to the acquisition of knowledge is cultivated in order to establish the student's continued intellectual growth and enthusiasm for the profession. The department fosters fair and equitable educational experiences for students of all ages and diverse backgrounds. Strong affiliations with clinical educators and the integration of innovative technology in the academic setting facilitate both the education and research goals of the department.

The department meets the growing health care needs of the community by providing highly competent and professional clinical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science.

The department promotes continued professional development and personal growth for the faculty and staff to fulfill and balance the individual's abilities and aspirations with the departmental, school, and institutional mission and needs. We conduct ourselves in a forthright manner and practice the highest standard of quality performance.

Objectives

The objectives of the Department of Clinical Laboratory Sciences are:

1. To provide an educational program which prepares students to accurately perform and evaluate analytical tests on body fluids, cells, and products.
2. To foster the development of professional conduct, interpersonal communication skills and ethical principles.
3. To develop and promote strategies for life-long learning and to encourage continued professional growth through research, continued education and active participation in professional societies.

Accreditation

The Department of Clinical Laboratory Sciences is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Upon graduation the student is eligible to take the national examinations given by the Board of Registry of the American Society of Clinical Pathologists and the National Credentialing Agency for Laboratory Personnel (NCALP).

Facilities

The Department of Clinical Laboratory Sciences is located in the Randolph-Minor Annex Building on the

MCV Campus. All faculty and clerical offices are located in this facility, as well as student classrooms, general teaching laboratory, computer facilities, and a student lounge/reading room. An auxiliary instrumentation laboratory is located in McGuire Hall, approximately four blocks from the primary facility.

The teaching laboratories are well equipped with the latest instrumentation used in today's methods of laboratory medicine.

Honors and Awards

A. D. Williams Award. An annual award may be made, on nomination of the faculty, to a student in each class who demonstrates, by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for personal development will be considered. The award is made at the end of the junior and senior years.

Achievement Awards. These awards may be given for outstanding achievement in each discipline in clinical laboratory sciences. The awards are given at graduation.

Daria Downing Scholarship Award. This award is in memory of Miss Daria Downing, who was the chief technologist of the clinical laboratories of MCV Hospitals from 1964 until her death in 1982. This award is given in December to an outstanding senior student in the Department of Clinical Laboratory Sciences.

Kupfer Award. This award was first given in 1965 in memory of Dr. Henry G. Kupfer, who was medical director of the School of Medical Technology from 1952 until his death in 1964. It is given to the senior who is considered to be the best all-around technologist. Throughout the program this student must demonstrate an outstanding sense of responsibility in all phases of clinical laboratory science, a keen concern for the patients, and the ability to work with others. The student must show a desire for personal and professional growth. The recipient of the award is selected by instructors in the clinical rotations and the faculty of the Department of Clinical Laboratory Sciences.

Financial Aid – General

Financial aid is available for all students meeting the criteria for financial assistance. For details of the programs available contact the Financial Aid Office, P.O. Box 980244, Richmond Virginia 23298-0244 or phone: (804) 828-9800.

Bachelor of Science Program in Clinical Laboratory Sciences

Clinical laboratory scientists receive training in the following areas: clinical biochemistry – the study of chemical reactions that occur in normal and diseased processes; hematology – the study of the cellular elements of the blood and blood forming tissues; microbiology – the study of microbiological aspects of infectious disease and the isolation and identification of pathogenic bacteria; immunohematology – the application of theory and principles of blood banking, cell typing, compatibility testing,

and antibody identification; and immunology – the study of antigen and antibody interaction in the diagnosis of disease. With the rapid advancement of knowledge in the field of laboratory medicine, there is a growing need for highly skilled and knowledgeable clinical laboratory scientists. Employment is found in hospitals, physicians' offices, research facilities, forensic, biomedical, electronic or instrumentation laboratories, industrial quality control, veterinary clinics, and sales and service of health care equipment. In addition to the technical arena, opportunities as managers or consultants exist for graduates of this program.

Admission and General Requirements. To qualify for admission, a candidate must have completed a minimum of 60 semester hours of collegiate training in any college or university approved by a recognized regional accrediting agency. Accredited collegiate training in preparation for the study of clinical laboratory sciences as for any professional career, should provide the opportunity for broad general education to include English, the social sciences, the arts, and the humanities. On entry to the department, the student must have completed 12 hours of chemistry (eight hours of general required; the remaining four hours in the order of preference: quantitative, organic, or qualitative; other courses may be accepted); 12 hours of biology (preferred four hours of general, four hours of human physiology, and four hours of human anatomy); three hours of mathematics; six hours of English composition; three hours of humanities (select from courses in history, philosophy, political science, religion, foreign languages, literature, art history or art application); three hours of social sciences (select from courses in anthropology, economics, geography, psychology or sociology) and one hour of arts that includes an experience component. In lieu of a formal course, demonstrated competence in a visual or performing art will be accepted. Acceptable competency includes (1) completion of extracurricular formal instruction independent of structured school activities once per week for a minimum of 18 months within the last ten years or (2) completion of an AP studio art course or (3) prior training coupled with current routine performances in an organized theater company, gallery, or orchestra/band.

Special Admissions. Certified medical laboratory technicians (or those eligible for certification) may qualify for special admission. An MLT applicant must have a minimum of 44 non-MLT semester hours of transferable credit for admission as a full-time student or 38 non-MLT semester hours for admission as a part-time student. The transfer hours must include eight hours of biology, eight hours of chemistry, three hours of mathematics, and six hours of English. MLTs admitted under special status are required to complete the science, humanities, social sciences and art requirements for regular admission before they qualify for graduation. Transfer credits are accepted for some CLS courses. Challenge examinations are offered.

Deadline for submission of applications is May 15. Those received after the deadline will be considered if space is available. Admission notification is done on a rolling basis after receipt of application materials. Detailed information regarding admission requirements and an application

may be obtained by writing to the Office of Undergraduate Admissions, Medical College of Virginia Campus/Virginia Commonwealth University, P.O. Box 980632, Richmond, VA 23298-0632, or to the Department of Clinical Laboratory Sciences, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980583, Richmond, VA 23298-0583 or from the Internet at <http://views.vcu.edu/views/sahp/cls/>.

Academic Regulations. The minimum passing grade for all professional courses leading to the bachelor of science degree is "D". All courses must be completed with a passing grade for the student to be eligible for promotion or graduation. Satisfactory completion of the previous semester's course work is a prerequisite to the next semester.

Promotion is based on recommendations of the faculty. The student is expected to:

1. maintain a grade-point average of 2.0 or better;
2. obtain a passing grade in all courses;
3. complete the clinical education requirements to the satisfaction of the clinical and academic faculty;
4. exhibit the attitudes and skills deemed necessary to function as a professional clinical laboratory scientist; and
5. pay all fees.

Detailed grading policies plus the mechanism for grade appeals are given to each entering student during orientation.

CURRICULUM

Variable credit is offered in consideration of the differing academic backgrounds of entering students. Semester hours given for each course are those required of the traditional student with no previous clinical training.

Junior Year		<i>Credits</i>
CLS 300	Basic Concepts	1.5
CLS 301-302	Hematology	8.5
CLS 303	Parasitology	1.0
CLS 304	Clinical Microscopy	2.0
CLS 306	Immunohematology	4.5
CLS 307	Introduction to Pathogenic Microbiology	3.5
CLS 308	Diagnostic Microbiology, Mycology, Virology	5.0
CLS 310	Clinical Immunology	4.5
CLS 311-312	Biochemistry	8.0
CLS 314	Clinical Instrumentation	3.0
Summer Session		
CLS 337	Clinical Education	1.0
		42.5
Senior Year		
CLS 407	Interpretive Immunohematology	2.5
CLS 408	Advanced Microbiology	2.0
CLS 409	Interpretive Hematology	2.0
CLS 410	Advanced Biochemistry	2.0
CLS 411	Principles of Education/Management	3.0
CLS 412	Clinical Correlations	1.0
CLS 414	Advanced Instrumentation	1.5
CLS 415	Special Topics in Clinical Laboratory Sciences (optional)	1-6
CLS 483	Biochemistry Practicum	3.0
CLS 485	Hematology Practicum	3.0
CLS 493	Clinical Microbiology Practicum	3.0
CLS 494	Miscellaneous Clinical Practicum	3.0
CLS 496	Blood Bank Practicum	3.0
CLS 438	Research Paper (optional)	1.0

Upon completion of prerequisite courses and the prescribed curriculum listed above, graduates of the Clinical Laboratory Sciences program, will have fulfilled the general education requirements of Virginia Commonwealth University.

Courses in Clinical Laboratory Sciences

CLS 201 Introduction to Clinical Laboratory Science. Semester course; 1 lecture hour. 1 credit. Open to students on the Academic Campus who are interested in clinical laboratory science/medical technology as a career. Presentation and discussion of clinical laboratory science including an introduction to each of the specific areas of concentration and a tour of a hospital laboratory. Discussion of various job opportunities for the profession.

CLS 300 Basic Concepts. Semester course; 1 lecture and 1 laboratory hour. 1.5 credits. An introduction to the basic concepts/techniques applicable to all laboratory science areas. Includes optical physics, quality control, laboratory safety, medical terminology, and pipetting techniques along with other basic subjects.

CLS 301-302 Hematology. Continuous course; 4.5 lecture and 8 laboratory hours. 2-9 credits. A study of the blood and blood-forming tissues. Emphasis is placed on hematologic techniques, accurate identification of normal and abnormal cells, and their correlation with normal or pathologic conditions. An introduction to the hemostatic mechanism is also presented.

CLS 303 Parasitology. Semester course; 1 lecture hour. 0.5-1.5 credits. A study of the life cycles of parasites and techniques used for isolation and identification of common parasites found in man.

CLS 304 Clinical Microscopy. Semester course; 1.5 lecture and 1 laboratory hour. 1-2 credits. A study of the principles and practices of urinalysis, kidney function, gastric analysis, cerebrospinal fluid, and other body fluids.

CLS 306 Immunohematology. Semester course; 2.5 lecture and 4 laboratory hours. 2-5 credits. A study of the theory and principles of blood banking with an emphasis on methods and techniques used in the laboratory for cell typing, cross-matching, and antibody identification.

CLS 307 Introduction of Pathogenic Microbiology. Semester course; 3 lecture and 1 laboratory hour. 0.5-3.5 credits. Fundamental principles of diagnostic pathogenic microbiology.

CLS 308 Diagnostic Microbiology, Mycology, Virology. Semester course; 3 lecture and 4 laboratory hours. 3-5 credits. The study of bacteria, fungi, viruses, antimicrobial susceptibility testing, and quality control; the relationship of bacteria, fungi, and viruses to infectious diseases including pathogenesis and epidemiology. Emphasis is placed on the techniques, methods, and procedures required to isolate and identify pathogenic microorganisms.

CLS 310 Clinical Immunology. Semester course; 3 lecture and 3 laboratory hours. 3-4.5 credits. Introduces the basic principles of immunology and serology. Emphasis is placed on laboratory evaluation of the immune response including both cellular and humoral aspects. Serologic techniques are practiced in the laboratory sessions.

CLS 311-312 Biochemistry. Continuous course; 6 lecture and 4 laboratory hours. 2-8 credits. A study of metabolism in normal and disease processes of the body. Emphasis is placed on the principles and methods used in testing biochemical reactions.

CLS 314 Clinical Instrumentation. Semester course; 2 lecture and 2 laboratory hours. 1-3 credits. Covers instrumentation found in clinical laboratories, including an introduction to electronic principles as applied to instrumentation. Course will examine the theory and application behind the various analytical methods used in clinical analysis.

CLS 320 Basic Laboratory Techniques. Semester course; 0.5 lecture hours and 1 laboratory hour. 1 credit. Prerequisites: CRS 303 or permission of instructor. An introduction to the basic concepts/techniques

applicable to all laboratory science areas. Includes operation and calibration of lab equipment such as pipettes, centrifuges, analytical balances and spectrophotometers; lab safety; quality control; statistics, and assay performance with standard curve generation and interpolation of unknown values.

CLS 337 Clinical Education. S. Semester course; 160 clock hours. 1 credit. Supervised clinical experience in hospitals across the state is designed to give the student a broader clinical education, and to provide venipuncture experience. In addition to the application of academically acquired knowledge, this affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel is an important aspect of this affiliation.

CLS 407 Interpretive Immunohematology. Semester course; 2.5 lecture hours. 2-2.5 credits. Prerequisites: CLS 306 and 310 or permission of instructor. Advanced study of the principles of immunohematology and immunology with major emphasis on blood group systems and blood components. Includes the application of laboratory data and techniques to solve problems in blood banking and immunology.

CLS 408 Advanced Microbiology. Semester course; 2 lecture hours. 2 credits. Prerequisites: CLS 307 and 308 or permission of instructor. Advanced study of the principles of pathogenic microbiology. Includes the application of laboratory data and techniques to solve problems in the clinical microbiology laboratory.

CLS 409 Interpretive Hematology. Semester course; 2 lecture hours. 2 credits. Prerequisites: CLS 301-302 and 485 or permission of instructor. Advanced study of the principles of hematopoiesis and their pathophysiological correlation to hematological disorders. Interpretation of morphological findings are correlated with case histories. Includes homeostatic problems.

CLS 410 Advanced Biochemistry. Semester course; 2 lecture hours. 2 credits. Prerequisites: CLS 311-312 or permission of instructor. An advanced study of intermediary metabolism and its relation to pathological disorders. Includes the application of laboratory data and techniques to solve problems in the clinical chemistry laboratory.

CLS 411 Principles of Education/Management. Semester course; 3 lecture hours. 2.5-3.5 credits. Introduces fundamental educational theories and practice, principles of management and employee relations, and healthcare issues from a global perspective with an emphasis on multicultural diversity. Stresses the application of these in the clinical laboratory.

CLS 412 Clinical Correlations. Semester course; 1 lecture hour. 1 credit. Seminars are presented on various aspects of professionalism and the interrelationships of the various laboratory disciplines are discussed during review sessions. A simulated registry exam is given at the conclusion.

CLS 414 Advanced Instrumentation. Semester course; 1.5 lecture hours. 1.5-2.5 credits. A basic introduction to computers and their application to the clinical laboratory. Laboratory and hospital information systems are discussed. Also included are the basic principles of instrument troubleshooting and preventive maintenance as well as a brief introduction to laboratory robotics. Students are required to complete a series of projects to satisfy the requirements for a contracted grade.

CLS 415 Special Topics in Clinical Laboratory Sciences. Semester course; 1-6 credits. Course provides for tutorial studies, laboratory experience, and/or library assignments in specialized areas for those students who have previous course work or laboratory experience in a specific subject.

CLS 438/HON 492 Research Paper. Semester course; 1 lecture hour. 1 credit. This course is designed to introduce the student to the fundamentals of scientific writing.

CLS 483 Biochemistry Practicum. Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLS 311-312. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the

staff. After gaining competence, students are expected to perform and sign out routine laboratory work under supervision.

CLS 485 Hematology Practicum. Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLS 301-302. Individual participation in hospital hematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work under supervision.

CLS 493 Clinical Microbiology Practicum. Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLS 307-308. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision.

CLS 494 Miscellaneous Clinical Practicum. Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLS 301-302, 308, 310, 311-312, or permission of instructor. Students gain practical experience in the use of instruments and the performance of procedures by working with the clinical staff. After gaining competence, students are expected to properly perform and sign out routine laboratory work under supervision.

CLS 496 Blood Bank Practicum. Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisite: CLS 306. Individual participation in hospital blood bank laboratories and Virginia Blood Services. Students gain practical experience in the use of procedures and instruments by working with the staff. Donor drawing and component preparation is observed. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision.

Department of Gerontology

Iris A. Parham

Professor of Gerontology and Psychology and Department Chair (1976) BA 1970 University of Texas; MA 1973 University of West Virginia; PhD 1976 University of Southern California

Ansello, Edward F. (1989) *Professor and Director, Virginia Center on Aging* AB 1966 Boston College; MEd 1967 University of Missouri; PhD 1970 University of Missouri

Dougherty, Linda M. (1985) *Associate Professor* BA 1979 University of Delaware; PhD 1985 University of Southern California

Egelhoff, William F. *Associate Professor Emeritus* BA 1940 Williams College; MBA 1943 Harvard University

Harkins, Stephen W. (1979) *Professor* AA 1963 Montreat-Anderson Junior College; AB 1966 Montreat-Anderson Junior College; PhD 1974 University of North Carolina, Chapel Hill

Osgood, Nancy J. (1980) *Professor of Gerontology and Sociology and Anthropology* BA 1972 Yankton College; MA 1974 Drake University; PhD 1979 Syracuse University

Master of Science in Gerontology

The graduate degree program in gerontology prepares individuals for careers involving work with the elderly at the national, state, and local levels. The curriculum is designed to provide knowledge for those interested in administration, planning, service delivery, and instructional/staff development. The master's degree requires 42 credit hours. A Certificate in Aging Studies may be obtained with completion of 17 credit hours. A more complete description is available in the *Graduate Bulletin*.

Department of Health Administration

Thomas T. W. Wan

Professor and Department Chair (1981) AB 1965 Tunghai University, China; MA 1968 and PhD 1970 University of Georgia; MHS 1971 Johns Hopkins University

- Clement, Jan P. (1988) *Associate Professor and Director, Professional Graduate Programs* BSS 1976 Cornell College; MSPH 1977 University of Missouri; PhD 1986 University of North Carolina
- Clement, Dolores G. (1988) *Associate Professor* BA 1970 Mount Saint Joseph; MA 1979 Ohio State University; MS 1981 Rush University; DrPD 1988 University of California, Berkeley
- Hurley, Robert E. (1990) *Associate Professor* BA 1969 St. Bonaventure University; MSW 1972 Ohio State University; MHA 1979 Ohio State University; PhD 1988 University of North Carolina
- Jurgensen, Michael D. (1994) *Instructor* BS 1983 James Madison University; MHA 1986 and PhD 1994 Virginia Commonwealth University
- Kraus, Richard C. (1994) *Professor* AB 1961 Asbury College; MHA 1964 Medical College of Virginia of Virginia Commonwealth University
- Lodge, Jeffrey R. (1992) *Instructor* BA 1987 Emory and Henry College
- Luke, Roice D. (1982) *Professor and Director, Williamson Institute for Health Studies* BS 1967 and MBA 1969 University of California, Berkeley; PhD 1976 University of Michigan
- McCue, Michael J. (1985) *Associate Professor and Director, PhD Program* BS 1970 University of Louisville; MBA 1982 University of Minnesota; DBA 1985 University of Kentucky
- Ozcan, Yasar A. (1979) *Associate Professor* BA 1972 University of Istanbul, Turkey; MBA 1975 Southeastern Louisiana University; PhD 1988 Virginia Commonwealth University
- Rossiter, Louis F. (1982) *Professor* BA 1971 Lenoir Rhyne College; MA 1972 University of South Carolina; PhD 1978 University of North Carolina, Chapel Hill
- Shukla, Ramesh K. (1977) *Professor* B.Tech 1967 Indian Institute of Technology, India; MS 1970 and PhD 1977 University of Wisconsin
- Swisher, Karen N. (1987) *Associate Professor* BS 1976 and MS 1977 Virginia Polytechnic Institute and State University; JD 1981 University of Richmond
- White, Kenneth R. (1994) *Assistant Professor and Associate Director, Professional Graduate Program* BS 1979 Oral Roberts University; MPH 1980 University of Oklahoma; PhD 1996 Medical College of Virginia of Virginia Commonwealth University

Emeriti Faculty

- Barker, Thomas C. *Professor Emeritus* BS 1954, MA 1960 and PhD 1963 State University of Iowa
- Cullen, Benjamin T., Jr. *Professor Emeritus* BS 1944 Virginia Polytechnic Institute and State University; MA 1950 and EdD 1967 University of Virginia
- Gross, Paul A. *Professor Emeritus* BS 1961 University of Georgia; MHA 1964 Medical College of Virginia of Virginia Commonwealth University
- Norville, Jerry A. *Professor Emeritus* BA 1961 University of Maryland; MS 1967 University of Colorado; MBA 1972 Midwestern University

Graduate Programs

The Master of Health Administration (MHA) program is designed to provide advanced educational preparation in the direction and management of health care organizations. It is a 58 credit hour program that requires two years of didactic course work and a year-long administrative residency. In conjunction with the MHA program, a joint MHA/Juris Doctor (MHA/JD) is offered with the University of Richmond Law School. The Master of Science in Health Administration (MSHA) Executive Program is designed to provide advanced educational preparation for practitioners with five or more years of progressively responsible managerial or clinical experience. The MSHA program requires 44 credit hours taken mainly through distance learning and five on-campus sessions over the two years needed for completion. The PhD Program in Health Services Organization and Research is a 57-credit program that prepares individuals for positions as faculty, researchers, policy analysts and top-level staff in complex health organizations. Pursued on a full-time basis,

the program requires two years of course work followed by a dissertation. See the *Graduate Bulletin* for further details on all of these programs.

Department of Nurse Anesthesia

Michael D. Fallacaro

Professor and Chair (1998) BSN 1977 D'Youville College; BS 1981 George Washington University; MS 1984 and DNS 1993 State University of New York, Buffalo

- Drain, Cecil B. (1993) *Professor and Dean, School of Allied Health Professions* BSN 1976 and MS 1980 University of Arizona; PhD 1986 Texas A & M University
- Embrey, James P. (1980) *Associate Professor* BA 1972 Virginia Wesleyan College; BSN 1977 Medical College of Georgia; MSNA 1983 Medical College of Virginia of Virginia Commonwealth University; PhD 1991 Virginia Commonwealth University
- Hartland, William, Jr. (1984) *Assistant Professor* BS 1970 Gordon College; BSN 1976 Texas Christian University; MS 1984 Texas Women's University; PhD 1993 Virginia Commonwealth University
- Hotchkiss, Melissa A. (1993) *Assistant Professor* BSN 1986 Old Dominion University; MSNA 1990 Medical College of Virginia of Virginia Commonwealth University
- Pontiflet, Addie R. (1986) *Assistant Professor* BS 1975 St. Joseph's College; MS 1983 University of Southern Maine
- Reese, Charles A. (1993) *Assistant Professor* BS 1968 University of Oklahoma; BS 1971 George Washington University; MBA 1975 National University; PhD 1977 California Pacific University

Master of Science in Nurse Anesthesia

This graduate degree program in nurse anesthesia is designed to prepare the baccalaureate-educated nurse for entry into practice as a nurse anesthetist. The curriculum combines course work in the basic sciences, the advanced practice of nurse anesthesia, and practical skill gained through clinical practica. The program maintains as its primary objective the graduation of a superb clinical specialist. See the *Graduate Bulletin* for a more detailed description of this program and the Postgraduate Certified Registered Nurse Anesthetist Professional Program.

Department of Occupational Therapy

Shelly Lane

Associate Professor and Department Chair (1996) BS 1975 Ohio State University; PhD 1984 University of Texas

- Cash, Sandra H. (1984) *Assistant Professor and Assistant Chair* BA 1970 Bridgewater College; MS 1973 Virginia Commonwealth University
- Copolillo, Albert (1997) *Assistant Professor* BS 1976 University of Illinois, Urbana; MS 1981 University of Puget Sound; PhD 1997 University of Illinois, Chicago Medical Center
- Krishnagiri, Sheama (1997) *Assistant Professor* BA 1986 University of California, Los Angeles; MA 1989 and PhD 1994 University of Southern California
- Lowman, Dianne Koontz (1995) *Assistant Professor* BS 1973 and MS 1974 James Madison University; EdD 1994 University of Virginia
- Peters, Sarah (1997) *Coordinator for the Interdisciplinary OT/PT Grant* BS 1966 Radford College; MS 1976 University of North Carolina
- Shepherd, Jayne T. (1986) *Assistant Professor* BS 1976 University of Virginia; MS 1981 Medical College of Virginia of Virginia Commonwealth University
- Simons, Dianne F. (1993) *Assistant Professor* BA 1972 Virginia Polytechnic Institute and State University; MS 1985 Virginia Commonwealth University

Teitelman, Jodi L. (1983) *Associate Professor* BA 1975 University of Richmond; MS 1977 and PhD 1983 Virginia Commonwealth University

Watts, Janet H. (1980) *Associate Professor and Director of Graduate Studies* BA 1973 College of William & Mary; MS 1977 and Certificate 1986 Medical College of Virginia of Virginia Commonwealth University; PhD 1997 Virginia Commonwealth University

Adjunct Faculty

David Bauer*
Lori Shiffman

Steve Gudas*

Clinical Faculty

Frances Atherton
Cecily Damour
Jean Dise
Annette Ernst
Carol Granger
Hilda Harrison
Jo Lawlor
Lory Osorio
Debra Powell-Roberts
Geraldine Seeber
Diane Smith
Carolyn Velletri

Elizabeth Coltrain
Mona Denning-Pruitt
Marjorie Elliott
Laura Evans
Judith Hanshaw
Susan Howard
Patricia Moore
Susan Parker
William Schmidt
Sheila Selznick
Gretchen Stephens

Emeriti Faculty

Madigan, M. Jeanne *Professor Emerita* BS 1956 College of St. Catherine; MA 1972 University of California, Los Angeles; EdD 1982 Loyola University

Wolfe, Eleanor V. *Associate Professor Emerita* BS 1945 University of North Carolina; MA 1951 Texas Women's University

* Joint or secondary appointment

History

The program in occupational therapy was initiated at Richmond Professional Institute in 1942. In 1965 the graduate program leading to the master of science degree in basic professional education in occupational therapy was initiated. The School of Occupational Therapy became a department in the School of Allied Health Professions in 1970 after the creation of Virginia Commonwealth University.

Undergraduate Program

A curriculum leading to the **bachelor of science** degree majoring in occupational therapy requires the completion of a minimum of 140 semester credits of work, including over 960 clock hours of fieldwork experience. Twelve weeks of the fieldwork must be continuous.

Graduate Programs

Master of Science in Occupational Therapy professional degree program is designed for college graduates who wish to become occupational therapists. This program may be completed in two calendar years. The professional master's degree program includes academic courses, a research project, and a minimum of 24 weeks of full-time fieldwork.

Master of science degree program is available for those who are registered occupational therapists. This post-professional program is designed individually in special areas of concentration. A minimum of 33 semester hours, including a thesis, is required. Detailed information on graduate programs, including specific admis-

sion requirements, may be found in the *Graduate Bulletin*.

Entry-Level Master's. Plans are being made to develop and implement a master's program that will accept applicants who have completed prerequisites and at least three years of bachelor's degree course work. Students will be accepted for three years of study culminating in a Master of Science in Occupational Therapy. June 1999 is the anticipated start date for this "3+3" master's degree program. Once approved, the 3+3 curriculum will replace the curriculum plan in the current *Bulletin*.

Honors Program

The University Honors Program was established to attract gifted students and to provide them with a challenging opportunity to achieve their highest academic potential. This program is open to all qualified undergraduate students. For a detailed description of qualifications for admission into the Honors Program, see Part VII of this *Bulletin*.

Philosophy

The Philosophy of Virginia Commonwealth University Department of Occupational Therapy embraces the Philosophical Base of Occupational Therapy stated by the American Occupational Therapy Association (1979):

Man is an active being whose development is influenced by the use of purposeful activity. Human beings are able to influence their physical and mental health and their social and physical environment through purposeful activity. Human life is a process of continuous adaptation. Adaptation is a change in function that promotes survival and self-actualization. Biological, psychological and environmental factors may interrupt the adaptation process at any time throughout the life cycle, causing dysfunction. Purposeful activity facilitates the adaptive process. Purposeful activity (occupation), including its interpersonal and environmental components, may be used to prevent and mediate dysfunction and to elicit maximum function. Activity as used by the occupational therapist includes both an intrinsic and a therapeutic purpose. (AOTA. [1979]. *The Philosophical Base of Occupational Therapy*. AJOT, 33, 785.)

Mission

The primary mission of the Department of Occupational Therapy is the preparation of excellent, innovative, adaptable, and responsible occupational therapists as professional leaders for the state and the nation.

In pursuit of this mission, the department:

- fosters student commitment to scientific inquiry and professional competence, and promotes personal growth, balance, and dedication to lifelong learning;
- promotes faculty excellence and collaboration in teaching, scholarship, and research, that model integrity and competence;

- collaborates with the community through education, consultation, and the development of strong linkages with clinical educators and the community; and
- interacts dynamically with the OT profession and stakeholders, contributing proactively to the evolution of the profession.

Accreditation

Both the undergraduate and professional master's degree programs in occupational therapy at Virginia Commonwealth University are accredited by the Accreditation Council for Occupational Therapy Education, 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220.

Facilities

The educational facilities of the Department of Occupational Therapy are located in the VMI Building at the northeast corner of Tenth and Marshall Streets. During the junior and senior years, fieldwork assignments related to courses are made for students in a wide range of clinics and agencies generally in the Richmond metropolitan area. A minimum full-time 24-week extended fieldwork requirement will be arranged in approved clinical educational facilities throughout the United States.

Honors and Awards

A. D. Williams Award. An annual award presented to the student who has achieved the highest academic average each year in the undergraduate program.

Cynthia Gudger Garris Scholarship. Two cash scholarships will be presented to students on the basis of financial need and grades in the Occupational Therapy program.

Bachelor of Science Program in Occupational Therapy

Undergraduate Admissions Requirements. Students wishing to pursue a course of study leading to the Bachelor of Science in Occupational Therapy offered through the School of Allied Health Professions may be admitted after two years of college work. A total of 62 semester credits from an accredited college or university is required for entrance into the professional curriculum. Preference will be given to students who exhibit good potential for occupational therapy. An interview by members of the Admissions Committee is required in addition to information related to other criteria.

Prerequisites for Admission

English Composition	6 semester hours
Biological Sciences	12 semester hours
Must include courses in human physiology and anatomy with laboratories	
Humanities	3 semester hours
Psychology	12 semester hours
Must include abnormal psychology and developmental psychology or human growth and development covering an entire life span	

Sociology
Statistics

6 semester hours
2 semester hours

These are considered minimum requirements. Basic knowledge of word processing and ability to use a personal computer are highly recommended. Students are encouraged to pursue further study in biology, psychology, sociology, visual and performing arts, liberal arts, and science courses which develop intellectual competence, enrich interest areas, and promote an awareness of a breadth of social and cultural values.

Criteria for admission include grade-point average, writing skills, volunteer or paid employment, and personal qualities.

Correspondence relating to the curriculum in occupational therapy should be addressed to the Department Chair, Department of Occupational Therapy, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980008, Richmond, VA 23298-0008.

For application to the professional curriculum, requests should be addressed to the Office of Undergraduate Admissions, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980632, Richmond, VA 23298-0632.

GENERAL EDUCATION REQUIREMENTS

- I. Communicating:** Beginning in the junior, and continuing into the senior year, students take courses with significant requirements for written and oral communication.

A. Written Communication

OCT 305	3 credits
OCT 411	2 credits

B. Oral Communication

OCT 403	2 credits
OCT 407	5 credits
OCT 412	3 credits

- II. Ethics:** Professional ethics are among the Essentials and Guidelines established by the American Occupational Therapy Association) for inclusion in all accredited programs. The curriculum covers components of ethics in a wide variety of courses. In addition to the courses listed below, students are evaluated on ethical behavior in fieldwork. Specifically in Level I fieldwork, completed during both the junior and senior years, students are evaluated on their ability to respect patient rights and confidentiality, and on being aware of professional ethics. In the Level II fieldwork assignment, students are also evaluated on their demonstration of an understanding of professional standards and code of ethics.

OCT 301	3 credits
OCT 305	3 credits
OCT 412	3 credits
OCT 418	3 credits

- III. Quantity and Form:** In addition to the following professional courses, several courses require students to use measurement devices (goniometers, dynamometers, grip, and pinch meters), compute scores and to convert raw test scores into standardized scores and read tables for certain tests they learn to administer. Thus, students develop competency in understanding and manipulating mathematical data.

OCT 315	1 credit
OCT 415	2 credits

IV. Science and Technology

ANA 525	5 credits
ANA 529	3 credits

V. Critical Thinking

VI. Interdependence: A combination of courses offer students an awareness and understanding of diversity in family strengths and needs, cultural diversity, and health care in the US and abroad.

OCT 418	3 credits
OCT 305	3 credits

VII. Visual and Performing Arts: In addition to successful completion of the following courses, students are encouraged to participate in other visual and performing arts opportunities and incorporate an appreciation for the arts into their value system.

OCT 309	3 credits
OCT 310	2 credits

VIII. Humanities and Sciences: Covered as prerequisites for program admission.

Psychology	12 credits
Sociology	6 credits
Humanities	3 credits

Academic Regulations. To continue in the undergraduate occupational therapy curriculum, students are expected to maintain a cumulative grade-point average (GPA) of 2.0 calculated on courses following matriculation and to demonstrate a level of competence in all subject matter.

- Undergraduate students who fail to maintain a cumulative GPA of 2.0 at the end of the first period of enrollment and each subsequent semester, or accumulate more than one "D" grade in their OT curriculum (regardless of the cumulative GPA) will be placed automatically on probation and notified by the Committee on Academic Standing and Student Progress.
- Students who receive an "F" grade in any required course will be considered for dismissal. If the Committee on Academic Standing and Student Progress decides that dismissal is not warranted, students will be automatically placed on probation.
- Conditions of Probation – students must earn a quality point average the semester of probation sufficient to result in a cumulative GPA of 2.0. Students who are on probation due to "D" grades must retake all but one "D" grade course(s) as designated by the committee, achieving a grade of "C" or better while also meeting all other academic standards. Conditions of probation may also include recommendations for academic counseling, assignments by individual instructors, and other requirements identified by the committee. Only one semester of academic probation is permitted. Students who fail to meet academic standards during the semester of probation or do not successfully complete deficient courses will be considered for dismissal from the program. Since courses are usually offered only once a year and since early courses serve as prerequisites for later courses, probationary students will have to continue under an adjusted curriculum plan. This will result in extending the student's time in the program.
- If a student withdraws or is terminated by the clinical facility before the completion of the Fieldwork Level II course because of poor performance or because of unsafe practices with

patients, the student will receive an "F" grade for the course. If a student withdraws, is terminated, or fails a fieldwork experience, the course may be repeated only upon approval by the committee in consultation with the department chair and the fieldwork coordinator. Students may be dismissed from the program or be allowed to continue contingent upon fulfilling remedial activities based on a plan prepared by the fieldwork coordinator and ratified by the Committee on Academic Standing. No more than one additional fieldwork experience will be rescheduled. Opportunity to re-register and repeat the fieldwork course is contingent upon the fieldwork coordinator's ability to locate another facility willing to offer a fieldwork experience to the student and the affirmative support of the committee.

- To continue in good standing, students are also expected to:
 - Pay all fees;
 - Maintain ethical behavior consistent with professional practice as defined in the *Occupational Therapy Student Handbook*; and
 - Complete fieldwork requirements to the satisfaction of clinical and academic faculty.
- Although arrangements are made in advance, students are reviewed prior to placement in Fieldwork II education. Students must have satisfactorily completed courses prerequisite to that fieldwork experience and be recommended by the faculty. They must also demonstrate professional behavior as specified in the ethical behavior listed in the *Occupational Therapy Student Handbook*. Medical problems or emotional instability may delay or prevent fieldwork placement.

CURRICULUM

Junior Year, fall semester		<i>Credits</i>
ANA 525	Functional Human Anatomy	5
OCT 301	Communications and Group Dynamics	3
OCT 303	Developmental Tasks and Occupational Roles I	3
OCT 309	Skills Laboratory I	3
OCT 315	Introduction to Research Process	1
		15
Junior Year, spring semester		
ANA 529	Neuroanatomy	3
OCT 305	Physical Dysfunction and Occupational Therapy I	3
OCT 306	Physical Dysfunction and Occupational Therapy II	3
OCT 307	Psychosocial Dysfunction and Occupational Therapy I	5
		14
Senior Year, fall session		
OCT 403	Development Tasks and Occupational Roles III	2
OCT 405	Physical Dysfunction and Occupational Therapy III	5
OCT 409	Skills Laboratory III	3
OCT 411	Theories of Occupational Therapy	2
OCT 415	Research Methods in Occupational Therapy	2
		14

Senior Year, spring semester

OCT 310	Skills Laboratory II	2
OCT 407	Psychosocial Dysfunction and Occupational Therapy III	5
OCT 412	Administration and Supervision of Occupational Therapy	3
OCT 418	Occupational Therapy in Health Care	3
		13

Fieldwork Sessions

OCT 493	Fieldwork:Psychosocial Dysfunction	9
OCT 494	Fieldwork:Physical Dysfunction	9
OCT 495	Fieldwork:Specialty (Optional)	6-9

Upon successful completion of the program, students are eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy. Certification is required by most employers as proof of professional competence.

Courses in Occupational Therapy

OCT 301 Communications and Group Dynamics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. This course is designed to introduce the occupational therapy student to the following: elements of effective communication in interpersonal relationships, nonverbal communication, problem-solving techniques, information-gathering techniques (observation, interview, documentary search, questionnaires), learning-teaching approaches, documentation, and use of medical terminology. The necessity of knowledge of these areas for appropriate professional communication is stressed.

OCT 303 Developmental Tasks and Occupational Roles I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Explores principles and theories of growth and development of occupational performance from infancy through adolescence. Focuses on assessment and sequential knowledge of sensorimotor, cognitive, and psychosocial performance skills related to self-care, play/leisure, school/work tasks, and life-stage roles. Caretakers, siblings, peers, and sociocultural influences on the developmental process are presented.

OCT 305 Physical Dysfunction and Occupational Therapy I. Semester course; 1 lecture and 6 laboratory hours. 3 credits. Physical and occupational performance problems prevalent in infancy through childhood will be studied. Explores occupational therapy assessment and intervention as a multivariant approach in medical, educational, home, and community settings. A holistic approach is employed which considers the child's development of sensori-motor, cognitive, and psychosocial skills and the family's expectations and the sociocultural environment. Includes level-one fieldwork.

OCT 306 Physical Dysfunction and Occupational Therapy II. Semester course; 2 lecture and 3 laboratory hours. 3 credits. Physical disabilities prevalent during adolescence will be examined. Detailed study of the role of the occupational therapist in evaluating and treating the special needs for this age group will be emphasized.

OCT 307 Psychosocial Dysfunction and Occupational Therapy I. Semester course; 2 lecture and 9 laboratory hours. 5 credits. Psychosocial stresses and pathologies that cause dysfunction during infancy through age 21 years will be the focus. The roles and functions of occupational therapy in medical, educational, and community settings will be identified. Level-one fieldwork will be assigned.

OCT 309 Skills Laboratory I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Introduction to use of activity for evaluation and treatment. Emphasis is placed on activity analysis and adaptation of various therapeutic media.

OCT 310 Skills Laboratory II. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Three units of instruction: woodworking - use of hand and power tools, construction and finishing techniques, and their therapeutic application; ceramics - use of various nonwheel ceramic techniques and their therapeutic applications; and weaving - use of four harness looms and their therapeutic applications.

OCT 315 Introduction to the Research Process. Semester course; 1 lecture hour. 1 credit. Provides fundamental information on research for analyzing and interpreting scientific literature. Includes philosophical foundations of quantitative and qualitative research, basic terminology and procedures, beginning skills in critical analysis, and APA writing style.

OCT 403 Developmental Tasks and Occupational Roles III. Semester course; 2 lecture hours. 2 credits. A study of adult ontogenesis and developmental tasks as they interrelate with adult occupational patterns. The course will examine work, productivity, leisure, retirement, and recreation in the adult years with emphasis on the importance of occupational success and balance for adaptation in adulthood and old age.

OCT 405 Physical Dysfunction and Occupational Therapy III. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Dysfunction as the result of physical disabilities that commonly occur during the adult years will be analyzed. Specific disabilities will be identified and discussed. The theory and practice of occupational therapy intervention in a variety of settings will be presented. Level-one fieldwork will be assigned as a portion of this course.

OCT 407 Psychosocial Dysfunction and Occupational Therapy III. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will focus on common psychiatric disorders of middle adulthood through old age, followed by review of concepts and techniques of occupational therapy evaluation and intervention. Assigned level-one fieldwork will be included.

OCT 409 Skills Laboratory III. Semester course; 6 laboratory hours. 3 credits. Provides instruction on basic principles of assessment and intervention in the areas of independent living, work and leisure. This includes the nature of work, work evaluation and adaptation, activities of daily living, adaptive devices, and life skills.

OCT 411 Theories of Occupational Therapy. Semester course; 2 lecture hours. 2 credits. Examines theoretical constructs that are used in various models of occupational therapy practice. Concepts integral to understanding and using human occupation as a basis for practice are emphasized. Current issues in practice are explored.

OCT 412 Administration and Supervision of Occupational Therapy Services. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Covers the management of human and nonhuman resources to provide efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy fieldwork education.

OCT 415 Research Methods in Occupational Therapy. Semester course; 2 lecture hours. 2 credits. Prerequisite: OCT 315. Focuses on skills needed to conduct research. Includes developing research problems; quantitative and qualitative design, data collection, analysis and dissemination; real life context of conducting research.

OCT 418 Occupational Therapy in Health Care. Semester course; 3 lecture hours. 3 credits. This course will cover the impact and relationship of the following to occupational therapy: patterns of health care in the United States and abroad, current issues affecting the delivery of health care, and the allied health professions. The student will learn to analyze community health resources in terms of organizational structure, funding, purposes of services, and client eligibility and accessibility. The influence of these components on occupational therapy services will be stressed.

OCT 491 Special Topics in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, with some knowledge and skills in a specialized area of occupational therapy. This course is optional.

OCT 493 Fieldwork - Psychosocial Dysfunction. Semester course; 1-9 credits.

OCT 494 Fieldwork - Physical Dysfunction. Semester course; 1-9 credits.

OCT 495 Fieldwork - Specialty (Optional). Semester course; 1-9 credits.

Program of Patient Counseling

Alexander Tartaglia

Associate Professor and Program Chair (1996) BA 1973 Colgate University; MA 1976, MDiv 1978 and DMin 1981 Andover Newton Theological School

Cain, Marlyne G. (1978) *Assistant Professor* BS 1961 University of South Dakota; MDiv 1967 Yale Divinity School; ThM 1970 Princeton Theological Seminary

Charles-Craft, Ann (1997) *Instructor* BS 1974 and MEd 1977 North Carolina-Greensboro; MDiv 1988 Southeastern Baptist Theological Seminary; Certificate in Patient Counseling 1996 Virginia Commonwealth University

Faulkner, Ken A. (1991) *Assistant Professor* BA 1979 Averett College; MDiv 1984 Southeastern Baptist Theological Seminary; Certificate in Patient Counseling Virginia Commonwealth University

Festa, Daniel K. (1990) *Assistant Professor* BA 1974 College of Charleston; ML 1976 University of South Carolina; DMin 1987 Union Theological Seminary; Certificate in Patient Counseling Virginia Commonwealth University

Williams, Cecilia A. (1993) *Assistant Professor* BA 1976 University of Massachusetts; MDiv 1984 New Orleans Baptist Theological Seminary

Young, Robert A., Jr. (1976) *Associate Professor* BA 1965 University of Richmond; MDiv 1969 and DMin 1973 Union Theological Seminary; Certificate in Patient Counseling 1976 Virginia Commonwealth University

Emeriti Faculty

Mauney, Jacob L., Jr. *Associate Professor Emeritus* BA 1960 Roanoke College; MDiv 1964 and DMin 1980 Lutheran Theological Southern Seminary

Prest, A. Patrick L., Jr. *Professor Emeritus* BS 1951 Lehigh University; MDiv 1954 Episcopal Theological School; DD 1977 University of the South

Graduate Program

The Program of Patient Counseling is designed to assist an individual to work in the health care field as one skilled in dealing with the whole person in the conflict of life's crises. It promotes the importance of educating qualified persons to address the human dimensions of illness. Patient counseling is the practice of communicating empathetic concern, support, and sensitive spiritual counsel to the physically or emotionally troubled person in the traumas of life. Patient counseling emphasizes a systems perspective on care, both in promoting an interprofessional team approach and in understanding counseling assessment/intervention within the context of family, as well as social systems. It is offered to persons who have an existing identity in a helping or counseling profession. This includes clergy, social workers, institutional counselors, education specialists, psychologists, community health workers, and others in the health care professions.

Department of Physical Therapy

Robert L. Lamb

Professor and Department Chair (1968) BS 1962 Slippery Rock State College; MS 1968 Boston University; PhD 1981 University of Maryland

Finucane, Sheryl G. (1987) *Assistant Professor* BA 1981 Wartburg College; BS 1983 Washington University; PhD 1991 Medical College of Virginia of Virginia Commonwealth University

Ford-Smith, Cheryl D. (1991) *Assistant Professor* BS 1982 Old Dominion University; MS 1989 Medical College of Virginia of Virginia Commonwealth University

Humphrey, Reed H. (1991) *Assistant Professor* BS 1974 University of Pittsburgh; MA 1976 Wake Forest University; PhD 1986 University of Pittsburgh

Lewis, Annabel M. (1989) *Assistant Professor* BA 1968 Connecticut College; Certificate 1969 Columbia University; MS 1986 Medical College of Virginia of Virginia Commonwealth University

Mayhew, Thomas P. (1985) *Associate Professor* BS 1983 and MS 1985 Washington University; PhD 1996 Medical College of Virginia of Virginia Commonwealth University

Payton, Otto D. (1971) *Professor* BS 1956 University of Kansas; MS 1964 Indiana University; PhD 1971 University of Maryland

Pidcoe, Peter (1998) *Assistant Professor* BS 1979 Pennsylvania State University; BS 1997 University of Illinois at Chicago; MS 1989 and PhD 1993 University of Illinois at Chicago

Riddle, Daniel L. (1986) *Associate Professor* BS 1979 Iowa State University; Certificate 1981 University of Iowa; MS 1985 Medical College of Virginia of Virginia Commonwealth University; PhD 1997 Virginia Commonwealth University

Shall, Mary Snyder (1987) *Assistant Professor* BA 1976 Creighton University; MS 1978 Duke University; PhD 1991 Medical College of Virginia of Virginia Commonwealth University

Shoaf, Lisa D. (1992) *Assistant Professor* BS 1981 Medical College of Virginia of Virginia Commonwealth University; MS 1990 James Madison University

Sullivan, Michael Scott (1990) *Associate Professor* BS 1981 and MS 1987 State University of New York, Stony Brook; PhD 1997 Medical College of Virginia of Virginia Commonwealth University

Wheeler, Emma (1997) *Assistant Professor* BA 1983 Wake Forest University; BS 1985 Medical College of Virginia of Virginia Commonwealth University

Emerita Faculty

Hirt, Susanne B. *Professor Emerita* BS 1948 University of Wisconsin; MEd 1956 University of Virginia

Graduate Programs

Professional Physical Therapy Master of Science Degree Program. The three-year graduate professional physical therapy program serves as an entrance into the profession. The goal of the program is to prepare physical therapists that have the basic skills, knowledge and attitudes to function effectively in the multifaceted role of a physical therapist focused on patient care. Prerequisites for admission to the professional program include a minimum of 90 semester hours in an accredited college or university. Students who complete the program earn a master of science degree and are eligible for the physical therapy licensure exam. The program is accredited by the Commission on Accreditation in Physical Therapy Education.

Advanced Graduate (Post-Professional) Master of Science Degree Program. The Department of Physical Therapy is committed to improving physical therapy services through advanced education. The department offers a master of science degree program for persons who have completed their physical therapy education. Two specialization tracks, musculoskeletal and neurologic, are offered. The objective of the program is to educate physical therapists in research, education, and clinical problem solving skills so that they will be the clinical and academic researchers and teachers of the future.

Doctor of Philosophy Degree Program. The Departments of Anatomy and Physiology of the School of

Medicine, together with the Department of Physical Therapy of the School of Allied Health Professions, offer PhD programs in anatomy-physical therapy and physiology-physical therapy. The goal of these doctoral programs is to train students in research and educational skills in preparation for the students to function as physical therapy faculty members.

For additional information on graduate programs in Physical Therapy, refer to the *Graduate Bulletin*.

Department of Radiation Sciences

Terri L. Fauber

Assistant Professor and Department Chair (1985) BS 1982 University of Texas; MA 1985 Louisiana Tech University; EdS 1991 and EdD 1996 College of William & Mary

Gillon, Richard D. (1988) *Instructor* AS 1985 George Washington University; BGS 1996 Virginia Commonwealth University

Meixner, Elizabeth L. (1988) *Assistant Professor* BS 1973 Virginia Polytechnic Institute and State University; MEd 1981 Virginia Commonwealth University

Swafford, Larry G. (1992) *Instructor* AAS 1985 Belleville Area College; BS 1988 University of Oklahoma; MEd 1997 Virginia Commonwealth University

Clinical Faculty

Douglas W. Arthur

Louise Francis

Mary Beth Hassler

Mary Beth Taormina

Diane L. Cowling

Melvin J. Fratkin

Uma R. Prasad

James L. Tatum

History

Radiologic technology education began at the Medical College of Virginia in the 1930's with a one-year training program in radiography. This program has undergone a number of changes through the years to evolve into the current baccalaureate educational program.

A concentration in nuclear medicine technology was added in 1984 and in radiation therapy in 1992. Degree completion programs have been added to provide an opportunity for certified technologists and therapists to complete requirements for the baccalaureate degree.

Programs

A Bachelor of Science in Clinical Radiation Sciences is offered in the following areas of concentration: radiography, nuclear medicine technology, and radiation therapy. These full-time programs include general education and professional course work over a three year period. Graduates of each of the programs are eligible for national certification examinations in their respective area of concentration.

Mission

The Department of Radiation Sciences is an integral part of the School of Allied Health Professions of the Medical College of Virginia of Virginia Commonwealth University and shares its values. The department serves as a national leader in the education of students in the radiation sciences and provides learning opportunities that are innovative and educationally sound. In addition to exhibiting technical competence and the judicious use

of ionizing radiation, graduates provide high quality patient care and leadership in their respective area of professional practice.

The department is accountable to students, their families, faculty, staff, alumni, the professional community, and others who have an interest in its activities. Consideration is given to the effective use of unique resources and facilities. Strong linkages with clinical affiliates and their staff are vital to our success. Faculty and staff work in a cooperative spirit in an environment conducive to inquisitiveness and independent learning to help a diverse student body develop to its fullest potential.

The faculty is committed to the concept of lifelong learning and promotes standards of clinical practice that will serve students throughout their professional careers. Faculty serve as a resource for professionals in practice and contribute to an expanded knowledge base in the field of clinical radiation sciences.

Goals

The goals of the Department of Radiation Sciences are to:

1. deliver thoughtfully developed curricula in radiation sciences for individuals preparing for professional practice;
2. offer timely, relevant educational opportunities that encourage practicing professionals to complete a baccalaureate degree;
3. provide an educational atmosphere that will engender intellectual curiosity, a commitment to lifelong learning, and excellence in clinical performance;
4. cultivate an awareness of, and promote behavior consistent with, the importance of professional demeanor and ethical conduct;
5. promote research and scholarly activity in clinical radiation sciences; and
6. foster development of faculty, staff and affiliated clinical staff.

Accreditation

The Radiography and Radiation Therapy programs are accredited by the Joint Review Committee on Education in Radiologic Technology. The Nuclear Medicine Technology Program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the Nuclear Medicine Technology program are also eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board.

Facilities

The educational facilities for the Department of Radiation Sciences are located in the west wing of the sixth floor of the West Hospital Building, 1200 East

Broad Street. These facilities include two well-equipped, energized radiographic laboratories with automatic film processing capabilities.

During the various phases of the curriculum, students will be assigned to one or more of the following affiliate institutions: Medical College of Virginia Hospitals of Virginia Commonwealth University, McGuire Veterans Affairs Medical Center, and Richmond Division, Columbia HCA Hospitals.

Honors and Awards

A. D. Williams Award. This award is given to the student in each class who has achieved the highest cumulative grade-point average.

A. D. Williams Scholarship. This scholarship may be awarded to students who demonstrate high scholastic attainment, professional clinical performance, and unusual promise as a radiologic technologist.

Senior Awards. An award may be given to a graduating senior in each curriculum in recognition of outstanding overall performance. Selection is based on cumulative GPA, faculty recommendations, and clinical performance.

Radiography – Nycomed Award

Nuclear Medicine – Mallinckrodt Award

Radiation Therapy – Varian Award

Tina Plaster Memorial Award. This award honors a member of the Class of 1992 who was tragically killed during the term of her program and recognizes a rising radiography senior who displays the following characteristics associated with Ms. Plaster: excellent academic standing, good attendance, excellent patient care, and high standards of professionalism.

Bachelor of Science Program in Clinical Radiation Sciences

Admission Requirements. Candidates for admission to any of the three concentrations must have completed high school or have passed a GED examination, and have completed the following post-secondary courses:

VCU equivalent

3 semester credits of college algebra	MAT 151
3 semester credits of general psychology	PSY 101
3 semester credits of composition and rhetoric	ENG 101
3 semester credits of computer science	CSC 128
8 semester credits of human anatomy and physiology	BIO 205, 206
8 semester credits of college physics	PHY 201,202

Transcripts of post-secondary work must be submitted with the application. Candidates must also submit personal references and complete an interview with a member of the admissions committee. Applicants are encouraged to obtain some knowledge of the concentration to which they are applying by observing in the appropriate hospital department or by working as a hospital volunteer.

Applications must be submitted by February 1st of each year. Applications submitted after that date can be accepted only on a space-available basis. Correspondence should be sent to the Office of Undergraduate Admissions, Medical College of Virginia Campus,

Virginia Commonwealth University, P.O. Box 980632, Richmond, VA 23298-0632.

GENERAL EDUCATION REQUIREMENTS

I. Communicating

ENG 101 and ENG 200 or equivalent - 6 credits
CRS 208 - 3 credits, writing intensive
CRS 390 - 2 credits; writing intensive
CRS 498 - 3 credits

II. Ethics

CRS 208 - 3 credits
CRS 393,394,395, 493, and 494 - seminars associated with each clinical course
PHI 213 - 3 credits (Nuclear Medicine only)

III. Quantity and Form

MAT 151 or equivalent
STA 210 or equivalent
CRS 232 - 2 credits
CRS 341 - 4 credits
CRS 320 - 3 credits (Radiography only)
CRS 451 - 3 credits (Radiography only)
CRS 461 - 3 credits (Nuclear Medicine only)
CRS 323 - 4 credits (Radiation Therapy only)

IV. Science and Technology

PHY 201-202 or equivalent - 8 credits
BIO 205 - 206 or equivalent - 8 credits
CSC 128 or equivalent - 3 credits
CHE 101-102 or equivalent - 10 credits (Nuclear Medicine only)

V. Interdependence

CRS 393,394,395,493 and 494 - seminars associated with each clinical course
HCM 300 - 3 credits

VI. Visual and Performing Arts

Elective - 1 credit

VII. Humanities and Social Sciences

PSY 101 - 3 credits
Humanities elective - 3 credits

Academic Regulations. To continue in the respective program, the student is expected to:

1. maintain a minimum semester grade-point and cumulative grade-point average of 2.0;
2. obtain a passing grade in all required courses and a "C" or better in all professional courses indicated with an asterisk in the curriculum outline; and
3. demonstrate the attitude and skills necessary to function as a professional in the selected area of concentration as assessed by academic and clinical faculty.

CURRICULUM

Radiography Concentration

		<i>Credits</i>	
		<i>Fall</i>	<i>Spring</i>
Sophomore Year			
ENG 200	Composition and Rhetoric II	-	3
BIO 200	Biological Terminology	1	-
HCM 300	Health Care Organization and Services	3	-
STA 210	Basic Practice of Statistics	3	-
CRS 203-204	Survey of Medical and Surgical Disease I and II	3	3
CRS 206	Cross-sectional Anatomy	-	2
CRS 208	Foundations of Patient Care*	-	3
CRS 232	Radiation Safety*	-	2

Electives		6	3	CRS 390	Research Methods in the Radiation Sciences	2	-
		16	16	CRS 393-394	Clinical Education I and II*	4	4
Summer I				General Elective		3	-
CRS 201	Introduction to Radiographic Imaging*	2	-			15	16
CRS 211	Radiographic Procedures I*	2	-	Summer II			
		4	-	CRS 395	Clinical Education III*	5	-
Junior Year				CRS 315	Pathology and Treatment Principles II*	3	-
CRS 311	Radiographic Procedures II*	4	-			8	-
CRS 312	Radiographic Procedures III*	-	2	Senior Year			
CRS 320	Principles of Radiographic Imaging*	-	3	CRS 455	Theory and Practice of Quality Assurance for Radiation Therapy*	2	-
CRS L320	Principles of Radiographic Imaging Laboratory*	-	1	CRS 488	Senior Seminar	-	1
CRS 341	Radiation Physics	4	-	CRS 493-494	Clinical Education IV and V*	5	5
CRS 390	Research Methods in the Radiation Sciences	2	-	CRS 498	Senior Project	3	-
CRS 393-394	Clinical Education I and II*	3	4	General Electives		6	-
Restricted Electives		3	6	Restricted Electives		-	9
		16	16			16	15
Summer II				Nuclear Medicine Technology Concentration*			
CRS 395	Clinical Education III*	5	-				
		5	-	Sophomore Year			
Senior Year							
CRS 330	Radiobiology*	-	2	CHE 101-102	General Chemistry	5	5
CRS 402	Pathophysiology for Radiographers	-	2	ENG 200	Composition and Rhetoric II	-	3
CRS 421	Radiographic Imaging and Equipment*	2	-	BIO 200	Biological Terminology	1	-
CRS 451	Quality Control Methods in Radiography*	3	-	STA 210	Basic Practice of Statistics	3	-
CRS 488	Senior Seminar	-	1	CRS 203-204	Survey of Medical and Surgical Disease I and II	3	3
CRS 498	Senior Project	3	-	CRS 208	Principles of Patient Care*	-	3
CRS 493-494	Clinical Education IV and V*	5	5	CRS 232	Radiation Safety*	-	2
Restricted Electives		3	6	CRS 341	Radiographic Physics	4	-
		16	16			16	16
				Summer I			
Radiation Therapy Concentration*				CRS 303	Orientation to Nuclear Medicine*	2	-
						2	-
				Junior Year			
				PHI 213	Ethics and Health Care	3	-
Sophomore Year				HCM 300	Health Care Organization and Services	3	-
				CRS 206	Cross-sectional Anatomy	-	2
ENG 200	Composition and Rhetoric II	-	3	CRS 317	Clinical Nuclear Medicine: Imaging Techniques*	3	-
BIO 200	Biological Terminology	1	-	CRS 322	Nuclear Medicine Instrumentation and Computer Techniques*	-	4
HCM 300	Health Care Organization and Services	3	-	CRS 344	Physics for Nuclear Medicine	-	3
STA 210	Basic Practice of Statistics	3	-	CRS 390	Research Methods in the Radiation Sciences	2	-
CRS 203-204	Survey of Medical and Surgical Disease I and II	3	3	CRS 393-394	Clinical Education I and II*	4	4
CRS 206	Cross-sectional Anatomy	-	2	General Elective		-	3
CRS 208	Foundations of Patient Care*	-	3			15	16
CRS 232	Radiation Safety*	-	2	Summer II			
CRS 341	Radiation Physics	4	-	CRS 313	Clinical Nuclear Medicine: Nonimaging Techniques	3	-
Humanities Elective		-	3	CRS 395	Clinical Education III*	5	-
General Elective		1	-			8	-
		15	16	Senior Year			
Summer I				CRS 330	Radiobiology*	-	2
CRS 201	Introduction to Radiographic Imaging	2	-	CRS 404	Pathophysiology for Nuclear Medicine	-	2
CRS 305	Orientation to Radiation Therapy*	1	-	CRS 453	Theory and Practice of Quality Assurance for Nuclear Medicine*	3	-
		3	-	CRS 461	Radiopharmaceutical Preparation and Quality Control	3	-
Junior Year				CRS 488	Senior Seminar	-	1
HED 487	Coping and Adaptation	-	3	CRS 493-494	Clinical Education IV and V*	5	5
CRS 309	Oncologic Patient Care*	2	-	CRS 498	Senior Project	3	-
CRS 314	Pathology and Treatment Principles I*	-	4				
CRS 323	Radiation Therapy Techniques and Applications*	4	-				
CRS 330	Radiobiology*	-	2				
CRS 342	Physics for Radiation Therapy	-	3				

General Electives	1	6
	<hr/>	<hr/>
	15	16

* See Academic AART Regulations described in this section.

* Certified (AART) radiographers with an associate degree or equivalent can complete the curriculum in two years; contact the Department for further information.

Degree Completion Programs. Full or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual. For further information, contact the department.

Courses in Clinical Radiation Sciences

CRS 101 Introduction to Clinical Radiation Sciences. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of the art and science of medical imaging. The use of ionizing radiation will be explored from its discovery to its current application in therapy and medical diagnosis. Radiography, Nuclear Medicine and Radiation Therapy will be discussed in terms of career specialties within the profession. Open to students on the Academic Campus who are interested in clinical Radiation Sciences as a career.

CRS 201 Introduction to Radiographic Imaging. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: CRS 208 and CRS 232. Introduction to the clinical process, equipment and radiographic imaging. Information will be presented that prepares the student to begin clinical practice. Clinical rotations and lab exercises are designed to expose the student to various aspects of radiographic imaging.

CRS 203-204 Survey of Medical and Surgical Disease I and II. Continuous course; 3-3 lecture hours. 3-3 credits. Prerequisites: BIO 205 and BIO 206. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

CRS 206 Cross-sectional Anatomy. Semester course; 4 tutorial laboratory hours. 2 credits. Prerequisite: BIO 205. A general overview of cross-sectional anatomy at representative levels will be presented. Emphasis will be on identifying major muscles, organs, bones and vessels on diagrams, photographs and images.

CRS 208 Foundations of Patient Care. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 200. Legal, ethical, and technical foundations of patient care will be explored with emphasis on the application of these principles to common radiologic situations.

CRS 211 Radiographic Procedures I. Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: BIO 205 and BIO 206 and CRS 208. Combines the study of anatomy and physiology and positioning for diagnostic radiographic examinations of the upper extremity, chest and abdomen. During laboratories, students demonstrate competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment, and evaluation of radiographs.

CRS 232 Radiation Safety. Semester course; 2 lecture hours. 2 credits. Provides an overview of radiation protection as it applies to the radiation sciences. Radiation sources, detection and regulations are presented. In addition, radiation protection responsibilities of the radiologic technologist for patients, personnel and public are discussed.

CRS 303 Orientation to Nuclear Medicine Clinic. Semester course; 1 lecture and 2 clinical hours. 2 credits. Designed to acquaint the student with the field of nuclear medicine in general and the Program in Nuclear Medicine Technology in particular. It also provides an introduction to clinical practice.

CRS 305 Orientation to Radiation Therapy. Semester course; 1 lecture hour. 1 credit. Provides an overview of radiation therapy, its role in medicine, student responsibilities, and department personnel and policy. The current cancer problem in the U.S., factors in cancer prevention, cancer management, and radiation therapy techniques will also be discussed.

CRS 309 Oncologic Patient Care. Semester course; 2 lecture hours. 2 credits. Covers the basic concepts of patient care specific to radiation therapy, including consideration of physical and psychological conditions. Patient interactions, patient examinations, asepsis, local and systemic reactions, nutrition and medications are discussed. Factors influencing patient health during and following a course of radiation will be identified.

CRS 311 Radiographic Procedures II. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: CRS 211. Continuation of CRS 211 with emphasis on anatomy and physiology and positioning for diagnostic radiographic examinations of the lower extremity, spine, pelvis and thorax, routine contrast studies, and basic and advanced headwork. Laboratory experience will include positioning of simulated patients, positioning and exposure of radiographic phantoms, manipulation of radiographic equipment, and evaluation of radiographs.

CRS 312 Radiographic Procedures III. Semester course; 2 lecture hours. 2 credits. Prerequisite: CRS 311. Continuation of CRS 211 and CRS 311 to cover additional positions added to routine examinations. In addition, a variety of routine special studies and special procedures that visualize the circulatory, lymphatic, reproductive, urinary and central nervous systems will be discussed.

CRS 313 Clinical Nuclear Medicine: Nonimaging. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 322. Integrates basic anatomy and physiology with nonimaging in-vitro nuclear medicine procedures. Topics include current radiopharmaceuticals of choice, biorouting of administered radiopharmaceuticals, normal and abnormal test values, and patient or specimen counting techniques.

CRS 314 Pathology and Treatment Principles I. Semester course; 4 lecture hours. 4 credits. Prerequisite: CRS 305. Presents the fundamentals of the disease process for cancer of the following: skin, thorax, genitourinary, gynecological, head and neck, central nervous system, and breast. The malignant condition, etiology, and epidemiology, patient workshop, and methods of treatment are discussed. Attention is given to patient prognosis, treatment results and the effects of combined therapies.

CRS 315 Pathology and Treatment Principles II. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 305. A continuation of CRS 314. Presents the fundamentals of the disease process for the following cancers: gastrointestinal, lymphomas and hematologic malignancies, bone tumors, childhood tumors, eye and orbital tumors. The malignant condition, etiology and epidemiology, patient workup, and methods of treatment are discussed. Attention is given to patient prognosis, treatment results and the effects of combined therapies. Radiotherapeutic emergencies, palliation, and combined modality treatment will also be discussed.

CRS 317 Clinical Nuclear Medicine: Imaging Techniques. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 303. Integrates basic anatomy, physiology, and instrument knowledge imaging nuclear medicine procedure. Topics include current radiopharmaceuticals of choice, biorouting of administered radiopharmaceuticals, accepted patient dosage levels, normal and abnormal test findings, and contradictions for radiopharmaceutical administration.

CRS 320 Principles of Radiographic Imaging. Semester course; 3 lecture hours. 3 credits. Prerequisites: CRS 201 and CRS 341. The variables that affect image production and radiographic quality will be presented. Radiographic quality will be analyzed to differentiate between diagnostic and optimal radiographs. Emphasis will be placed on sharpness and visibility of recorded detail.

CRS L320 Principles of Radiographic Imaging Laboratory. Semester course; 2 laboratory hours. 1 credit. Prerequisite: CRS 201. Can be taken concurrently with or subsequent to CRS 320. Designed to

demonstrate the effect of radiographic variables on image production and quality. Students will perform lab exercises to manipulate a variety of variables and analyze their effect on the radiographic image.

CRS 322 Nuclear Medicine Instrumentation and Computer Techniques. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisite: CSC 150. Introduces the student to electronic principles of nuclear medicine instrumentation and the principles of operation for equipment that measures and records the interaction of radiation with matter.

CRS 323 Radiation Therapy, Techniques and Applications. Semester course; 4 lecture hours. 4 credits. Corequisite: CRS 342. Presents the basic concepts of dosimetry and treatment planning. Various external beam techniques and applications, depth dose data, and summation of isodose curves are discussed. Modalities of treatment, patient setup, dose measurement and verification are also included.

CRS 330 Radiobiology. Semester course; 2 lecture hours. 2 credits. Prerequisite: CRS 232. The principles of biologic responses to radiation are presented, including factors influencing radiation effects, tissue sensitivity, and tolerance. Clinical applications in radiography, nuclear medicine and radiation therapy are considered.

CRS 341 Radiation Physics. Semester course; 4 lecture hours. 4 credits. Prerequisite: PHY 202. Presentation of the production of x and gamma rays; interaction of radiation with matter; units of radioactive exposure and absorbed dose; measurement of radiation; and physical principles of computed tomography, magnetic resonance imaging, sonography, mammography, and digital imaging.

CRS 342 Physics for Radiation Therapy. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 341. Includes a discussion of the properties of electromagnetic and particulate radiation. Details of production, interactions, treatment units, measurement of radiation, radioactivity, and brachytherapy are presented.

CRS 344 Physics for Nuclear Medicine. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 341. Builds on concepts introduced in CRS 341, presenting topics of interest to nuclear medicine technologists in greater depth. Covers special theory of relativity, induced nuclear reactions, nuclide chart, radioactive decay, physical characteristics of alpha and beta particles, gamma rays, and gamma scintillation spectroscopy.

CRS 390 Research Methods in the Radiation Sciences. Semester course; 2 lecture hours. 2 credits. Pre or corequisite: STA 210. The fundamentals of the research process will be presented for analysis and discussion. Elements of research appropriate to the radiation sciences will be reviewed. Emphasis will be on the ability to critically review research studies along with the selection and design of a research project.

CRS 393-394 Clinical Education I and II. Continuous course; variable clinical hours. 3-5 credits. Prerequisites: CRS 208, CRS 232 and CRS 201 or CRS 303 or CRS 305. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

CRS 395 Clinical Education III. Semester course; 360 clinical hours. 5 credits. Prerequisite: CRS 394. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic procedures and begin to gain experience in advanced procedures.

CRS 402 Pathophysiology for Radiographers. Semester course; 2 lecture hours. 2 credits. Prerequisites: CRS 204 and CRS 493. Introduction to the study of radiographic pathology through reading and observation of film interpretation. Emphasis is on recognizing common disease processes as demonstrated radiographically; where appropriate, understanding how to vary positioning and techniques to produce optimally diagnostic images and the role of different imaging modalities in the evaluation of disease.

CRS 404 Pathophysiology for Nuclear Medicine. Semester course; 2 lecture hours. 2 credits. Prerequisites: CRS 313 and CRS 317. Examines how various pathophysiological states of organs and organ sys-

tems affect the results of nuclear medicine procedures. Both qualitative and quantitative analysis of imaging procedures are discussed.

CRS 405 Principles of Mammography. Semester course; 2 lecture hours. 2 credits. Prerequisite: CRS 201 or permission of instructor. Presentations and discussions designed to provide an overview of the principles of mammography. Topics include history, anatomy, physiology and pathology of the breast; exposure techniques; and quality control. Focuses on routine and specialized positioning of the breast and image evaluation to prepare students for practical experience in mammography.

CRS L405 Principles of Mammography Lab. Semester course; 2 laboratory hours. 1 credit. Prerequisite: CRS 201 or permission of instructor. Can be taken concurrently with or subsequent to CRS 405. Provides simulated experience in performing positioning of the breast. Students will be expected to demonstrate competence in positioning the breast phantom for a variety of routine and specialized projections. In addition, quality control procedures specific to mammography will be performed.

CRS 406 Introduction to MRI. Semester course; 3 lecture hours. 3 credits. Prerequisite: CRS 206 and CRS 341. An introduction to the elements of magnetic resonance imaging, including instrumentation, physical principles, image production and quality, MR safety, magnetic resonance angiography, and imaging applications.

CRS 421 Radiographic Imaging Equipment. Semester course; 2 lecture hours. 2 credits. Prerequisite: CRS 320. Principles and operation of general and specialized x-ray equipment are presented. Emphasis is on equipment necessary to perform radiographic, fluoroscopic and tomographic examinations.

CRS 451 Quality Control Methods in Radiography. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CRS 320 and CRS L320. Designed to investigate quality control measures in radiology. Emphasis will be on monitoring components of the imaging system that may affect radiographic quality through improper functioning. Lab exercises will provide students an opportunity to perform various quality control checks on the processor and imaging equipment.

CRS 453 Theory and Practice of Quality Assurance for Nuclear Medicine. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CRS 322. Explores the quality assurance parameters in a nuclear medicine department. Emphasis is given to the performance of tests to assess survey meters, spectrometers, dose calibrators, gamma cameras, and SPECT imaging systems. Additionally, quality assurance is discussed in terms of radiopharmaceuticals, radioimmunoassay laboratories, and patient management.

CRS 455 Theory and Practice of Quality Assurance for Radiation Therapy. Semester course; 2 lecture hours. 2 credits. Prerequisite: CRS 323. Designed to provide the student with knowledge of the concepts and principles of quality assurance. The performance of various tests, including purpose, sources of malfunction, and action guidelines will be discussed.

CRS 461 Radiopharmaceutical: Preparation and Quality Control. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CRS 303 and 2 semesters of general chemistry. Provides the technical knowledge necessary for the preparation and quality control of radiopharmaceutical agents for in-vivo and in-vitro nuclear medicine studies.

CRS 480 Applied Radiology Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: Departmental approval. Relates basic concepts in management to the radiologic environment and explores the relationship between the radiologic facility and the health care system.

CRS 488 Senior Seminar. Semester course; 1 lecture hour. 1 credit. Prerequisite: Senior standing in department. Designed to allow students to integrate the various individual courses into a single perspective as it relates to the radiation sciences. New developments and timely professional issues will be presented for discussion. Attention is given to underscoring the responsibilities of health care professionals with emphasis on the need for lifelong learning and participation in professional organizations.

CRS 492 Directed Study: Radiation Sciences. Semester course; 1-4 credits. Maximum of six credits can apply to graduation requirements. Prerequisite: Permission of department chair. Provides the opportunity for individualized research projects, tutorial studies, special clinical work, or other topics not available in formal course work.

CRS 493 Clinical Education IV. Semester course; 360 clinical hours. 5 credits. Prerequisite: CRS 395. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and in advanced procedures. Opportunities for elective clinical rotations are provided.

CRS 494 Clinical Education V. Semester course; variable clinical hours. 2-5 credits. Prerequisite: CRS 493. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and in advanced procedures. Opportunities for elective clinical rotations are provided.

CRS 498 Senior Project. Semester course; 3 credits. Prerequisites: CRS 390 and Senior standing in department. Provides students the opportunity to explore and investigate a topic of special interest in their area of concentration. Emphasis will be on applying research concepts in the design, implementation and presentation of a project.

Department of Rehabilitation Counseling

Brian T. McMahon

Professor and Department Chair (1997) BS 1972 Loyola University, Chicago; MS 1974 Illinois Institute of Technology, Chicago; PhD 1977 University of Wisconsin, Madison

Chandler, Anne L. (1985) *Associate Professor and Associate Director, University Honors Program* BA 1969 Vanderbilt University; MA 1974 and PhD 1978 Michigan State University

Cull, John G. (1998) *Clinical Professor* BS 1959 and MEd 1960 Texas A & M University; PhD 1967 Texas Tech University

Glenn, Margaret K. (1998) *Assistant Professor* BA 1978 Bridgewater College; MA 1984 Virginia Commonwealth University; EdD 1997 George Washington University

Luck, Richard S. (1976) *Associate Professor* BA 1966 University of Richmond; MS 1968 Virginia Commonwealth University; EdD 1975 University of Virginia

Martin, E. Davis, Jr. (1975) *Professor* BS 1968 and MS 1970 Virginia Commonwealth University; EdD 1976 University of Virginia

Reid, Christine A. (1997) *Assistant Professor* BA 1983 and MA 1985 Northern Illinois University; PhD 1993 Illinois Institute of Technology

Rosecrans, John A.* (1996) *Professor* PhD University of Rhode Island

Rule, Warren R. (1972) *Professor* AB 1965 Pfeiffer College; MA 1967 Appalachian State University; PhD 1972 University of South Carolina

Wehman, Paul H.* (1998) *Professor* BBA 1970 Western Illinois University; MS 1972 Illinois State University; PhD 1967 University of Wisconsin, Madison

Emeriti Faculty

Gandy, Gerald L. *Professor Emeritus* BA 1963 Florida State University; MA 1968 and PhD 1971 University of South Carolina

Hardy, Richard E. *Professor Emeritus* BS 1960 Virginia Polytechnic Institute and State University; MS 1962 Richmond Professional Institute; AGS and EdD 1966 University of Maryland; ABPP Diploma in Counseling Psychology

Jarrell, George R. *Professor Emeritus* BS 1949 University of Florida; MRC 1961 University of Florida; PhD 1970 University of South Carolina

Lawton, Marcia J. *Associate Professor Emerita* AB 1959 Pembroke College; MA 1961 and PhD 1963 Northwestern University

Wright, Keith C. *Professor Emeritus* AB 1949 and MA 1950 Marshall College

* Joint appointment

Undergraduate Studies in Rehabilitation Studies

From 1974 to 1994, the department offered a bachelor of science degree program in rehabilitation services.

With the development of national certification groups and licensure laws in most states, professional counseling has become a predominantly graduate-level profession. The department no longer offers the baccalaureate degree in rehabilitation services, but continues to offer the undergraduate courses in rehabilitation services in interdisciplinary cooperation with other majors.

Pathways. Pathways, initiated in the spring of 1996, is a unique interdisciplinary program concentration designed for students from a wide variety of academic departments who are interested in pursuing alcohol and drug rehabilitation studies. A sequence of recommended courses is offered to students who are majoring in psychology, criminal justice, social work, pharmacy, nursing, rehabilitation counseling and other academic and professional disciplines. The sequence of course work depends upon the level of intensity sought by the student, and it may range from only a single introductory course to a complete specialization. Pathways enables students to select a curricular path which matches their substance abuse rehabilitation interest regardless of their discipline. The program is available to undergraduates and is arranged in collaboration with the student's major adviser and/or Director of the Rehabilitation Substance Abuse Counselor Education Concentration.

Courses in Rehabilitation Services

Courses in rehabilitation services provide a basic understanding of people with mental, physical, cognitive and sensory disabilities and how to help them lead more productive lives. The courses are not only relevant to future graduate study in the profession of rehabilitation counseling, but to a number of other rehabilitation related professions such as clinical and counseling psychology, social work, special education, corrections, therapeutic recreation, occupational therapy, physical therapy, and so forth.

Courses are offered in substance abuse rehabilitation at the undergraduate level to prepare the student to meet eligibility requirements for state and national substance abuse counselor certification, but are also available as elective credit which can be applied toward fulfilling degree requirements or meeting continuing education needs.

One honors course is included in the University Honors Program in REH 202 General Substance Abuse Studies. Interested students should contact the University Honors Program office for further information.

REH 201 Introduction to Rehabilitation Services. Semester course; 3 lecture hours. 3 credits. This course has been designed to expose the student to the history and development of the rehabilitation movement. Topics explored include basic concepts and philosophies of rehabilitation, psychological and vocational adjustments of the disabled, and an examination of selected rehabilitation methods.

REH 202 General Substance Abuse Studies. Semester course; 3 lecture hours. 3 credits. This course is designed to help the student develop an appreciation of society's attitude about the use of drugs and alcohol, and each individual's responsibility in decisions about the use of drugs. Discussion is offered on specific characteristics of drugs, how addiction occurs, and role of rehabilitation after addiction.

REH 321 Introduction to Substance Abuse. Semester course; 3 lecture hours. 3 credits. Prerequisite: REH 202. Introduction to substance abuse as a progressive family disease with consideration of basic contributing factors (physiological, psychological, and sociocultural builds on foundation established in REH 202); exposure to multidisciplinary rehabilitative approaches to arresting the disease, as well as some knowledge of intervention; brief mention of the highlights of the continuum of care available in the recovery process.

REH 452 Crisis Intervention with the Substance Abuser. Semester course; 3 lecture hours. 3 credits. Prerequisites: REH 321,

322, 523, or permission of instructor. Focus on the application of concepts discussed in theory in the recovery process course; sharing of difficulties and successes with crisis intervention by individuals already in the field; provision of new and more refined techniques under the direction of experts demonstrating their applicability.

REH 495 Practicum in Rehabilitation. Semester course; 3, 6, 9, or 12 credits. Prerequisite: Permission of instructor. Designed to provide opportunities for observation and participation in rehabilitation and related settings. Experiences are systematically related to theoretical concepts.

Graduate Education

Master of Science in Rehabilitation Counseling. The Master of Science in Rehabilitation Counseling prepares students to become Certified Rehabilitation Counselors who provide direct professional service and administrative leadership in agencies and organizations involved with mental and physical disabilities. Admission is based on an applicant's suitability for a career in rehabilitation counseling, and other factors such as emotional maturity, previous work experience, scholarship, recommendations, and a personal interview. For further details on admissions and the program, see the *Graduate Bulletin*.

Advanced Certificate in Professional Counseling. The Advanced Certificate in Professional Counseling is designed to help students fulfill the post master's requirements for the Licensed Professional Counselor credential in Virginia and other states. The additional training also helps students to achieve national certification in such counseling specialties as rehabilitation, mental health, marriage and family, and alcohol and drug abuse. For further details on admissions and the program, see the *Graduate Bulletin*.



School of the Arts

Richard E. Toscan

Dean and Professor of Theatre (1996) BA 1963 Purdue University; MA 1964 and PhD 1970 University of Illinois, Urbana-Champaign

Thomas H. DeSmidt

Associate Dean and Professor of Painting and Printmaking (1971) AA Lincoln College; BFA Layton School of Art; MFA 1970 Syracuse University

Paul E. Petrie

Associate Dean and Professor of Interior Design (1984) BID University of Manitoba; MFA 1976 Syracuse University

Daniel J. Reeves

Assistant Dean and Director of Graduate Studies and Professor of Art Education (1978) BA West Liberty State College; EdM University of Pittsburgh; EdD 1971 Illinois State University

Lydia C. Thompson

Assistant Dean and Assistant Professor (1990) BFA 1983 Ohio State University; MFA 1985 New York State College of Ceramics

Ted Potter

Director, Anderson Gallery and Associate Professor (1997) BFA Baker University; MFA 1961 California College of Arts and Crafts

John T. Bryan

Director, Faculty Research and Development and Assistant Professor of Art (1981) BS Davidson College; MA George Peabody College; MFA 1975 City College of New York

The School of the Arts at Virginia Commonwealth University began in 1926 as a single course offered in sculpture. Two years later, a one-faculty art department was born under the guiding hand of Miss Theresa Pollak. Since then the school has grown to its present stature, achieving national and international recognition through its quality programs in visual and performing arts.

In 1969, the Department of Dramatic Art and Speech and the School of Music, until that time independent departments within VCU, combined with the School of Art to form the present School of the Arts.

The visual arts programs of the school are accredited by the National Association of Schools of Art and Design. The Department of Music is accredited by the National Association of Schools of Music and the Department of Interior Design is accredited by the Foundation for Interior Design Education Research.

The School of the Arts offers distinctly professional programs in which students devote the greater portion of each day to professional courses in the arts. As part of a metropolitan university, art students are provided

with the advantages of comprehensive facilities, as well as professionally competent faculty. It is the only state-supported professional school of the arts in the South, and one of the few in the country, offering a professional curriculum within a combined academic and professional environment.

The purpose of the School of the Arts is to enliven and enrich literacy in the visual and performing arts through the advanced thought and perception of its students and faculty. It intends to develop innovative approaches to the making and comprehension of works of art which elaborate on the complexities of contemporary people. These works of art clarify and give meaning to the uncertainty of the human condition. To sustain inquiry into the nature of being and becoming and to strengthen the artistic process and the products that reflect that inquiry, constitute two of the major objectives of the school.

Each department within the school contributes to meeting these objectives by encouraging students to approach and resolve aesthetic, intellectual, and technical problems with scholarly analysis, experimentation, informed discrimination, and environmental awareness. In short, the School of the Arts stimulates students to develop a highly professional attitude toward their work and to solve significant creative problems.

Degree Programs

Baccalaureate programs within the School of the Arts prepare creative people for careers in the visual and performing arts. The school emphasizes the development of individual competencies in the arts through the following departments:

- Art Education
- Art History
- Communication Arts and Design
- Crafts
- Dance/Choreography
- Fashion Design and Merchandising
- Interior Design
- Music
- Painting and Printmaking
- Photography (no undergraduate degree offered)
- Sculpture
- Theater

The School of the Arts offers graduate programs culminating in the Master of Fine Arts, Master of Art

Education, Master of Arts, and Master of Music with major and minor concentrations in various departments. Detailed information on these programs appears in the *Graduate Bulletin*.

Transfer Students

Departmental faculty committees determine placement in all upper-level courses after evaluating the student's record, performance, audition, and/or creative work. The student should contact the appropriate department chair at the time of acceptance to arrange for this evaluation before actual enrollment.

Special Charges

All full-time majors enrolled in the School of the Arts are charged a \$150 comprehensive fee each semester; part-time students are charged a \$75 fee per semester. The money is prorated to the individual departments which determine the expenditures, resulting in a rebate to the students through materials, services and/or equipment, and may include models, field trips, or special lectures. Students enrolled in any of the numerous courses which require an additional outlay for materials will be billed for those individual fees by the Office of Student Accounting.

Internships and Cooperative Education

The School of the Arts encourages qualified students to enter into limited and carefully selected internship arrangements. To assist students, departments and programs are encouraged to identify, evaluate and select internship arrangements that will expand and complement the scope of the student's educational experience, and support the University's, the school's and the department's or program's mission.

Internship arrangements are coordinated by the individual department or program and are considered University-supported activities involving enrolled students and faculty. All participants in such arrangements are subject to all applicable University policies and procedures. These policies and procedures include, but are not limited to, conflict of interest, intellectual properties, faculty rights and responsibilities and those policies and procedures outlined in the *VCU Resource Guide*.

While the School of the Arts encourages student internship arrangements, it disallows student internship arrangements when family members serve in a supervisory capacity. Should such an internship arrangement become an option, the approval of the dean must be received prior to completing any final agreement.

The School of the Arts also participates in the Cooperative Education Program. Qualifying students can take part in this program through most departments. A full description of the program appears in Part XX of this *Bulletin*.

Academic Requirements

All majors in the School of the Arts must earn a minimum grade of "C" in all major work in order to remain in their departments.

The department and the student's adviser periodically evaluate the record of each student. If, at any time during undergraduate studies, the department faculty concludes a student is not demonstrating adequate progress in the area of concentration, the student will be advised to withdraw from that department.

General Education Requirements

The School of the Arts is committed to educating students about the role of the artist in a complex, ever-changing world. Graduates are prepared to become responsible, productive artist-citizens who will make meaningful contributions to their discipline and to society. The university-based professional school provides students with rich, varied educational experiences that will acquaint them with new ideas and with the breadth of knowledge to successfully face the challenges and changes the future will bring. The appreciation for life-long learning is inherent in the education of the artist.

Students in the School of the Arts develop mastery of their chosen field of study by concentrated immersion within their specialty. The University commitments and curricular elements form the framework upon which this discipline-oriented education is based and are interwoven throughout the curricula of the departments. Each department addresses University commitments and curricular elements to best satisfy the needs of students within the major and has identified content areas outside of the school which must be successfully completed by all students in the school. In addition, the individual departments have allocated varying numbers of general education electives for students to achieve personal and professional goals. Students have the opportunity to choose from a wide variety of courses or may focus within a specific area and develop a minor.

The School of the Arts faculty have developed general education expectations for students. These reflect the four University commitments and seven curricular elements amplified to reflect the baccalaureate degrees offered by the School of the Arts.

1. Communicating

Students should understand the basic construction of our language and be able to express themselves coherently in writing and through speech. They should understand the professional language of their discipline and be able to communicate this clearly.

- 1.1 All students will successfully complete university-level equivalency of ENG 101, ENG 200 Composition and Rhetoric. This course work emphasizes reading and writing.
- 1.2 All students will complete at least two courses which emphasize writing and are designated WI (writing intensive).
- 1.2.1 At least one required course, within the student's major, will have a writing emphasis that meets the "Writing Emphasis Guidelines" of the School of the Arts. Discipline-oriented writing intensive course work may

include the preparation of research reports and term papers, written critical reviews, journals and other vehicles that allow the student to form abstract concepts into written language. This work will be critiqued from both a technical and writing standpoint with the opportunity to be redone to meet the standards of written communication needed for the profession.

School of the Arts discipline-oriented courses that have a writing emphasis and designated WI (writing intensive) include:

AEN 311 Curriculum and Instruction
 AEN 401 Elementary Materials and Practicum
 AEN 402 Secondary Materials and Practicum
 ARH 455 Aesthetics and Modern Theories of Art
 ARH 497 Directed Research Project
 CDE 339 Media Presentation
 CDE 412 Typographics II
 CDE 424 Visual Journalism
 CRA 482 Senior Seminar
 DAN 107 Dance Perspectives
 DAN 308 Dance History
 DAN 313 Dance in Non-Western Cultures
 FDE 319 Twentieth-Century Fashion
 IDE 251-252 Historic Interiors and Architecture
 MHT 421,422 Music History
 PAP 490 Senior Seminar
 SCU 491 Topics in Sculpture (Senior Seminar)
 THE 211-212 Introduction to Drama
 THE 361-362 Directing

1.2.2 Any additional course identified by the WI designation will satisfy the requirement for a second writing intensive course. (Refer to the current *Schedule of Classes*).

1.3 All students will participate in oral communication experiences that will help them develop the skills to speak effectively. Oral communication experience can be achieved by students preparing and presenting verbally to an audience. This may include presentation and defense of work in a critique or jury forum, presentation of prepared work in a class setting, and other vehicles that provide the student opportunities to develop skills that support the ability to speak with a level of ease in front of a group of people.

Within the School of the Arts' majors the following courses satisfy the requirement for oral communication experience:

AEN 311 Concepts in Art Education II
 AEN 401 Concepts in Art Education III
 AEN 402 Concepts in Art Education IV
 ARH upper division period courses
 CDE 212 Design Process
 CDE 339 Media Presentation
 CDE 423 Editorial Illustration
 CRA:all Crafts studio courses
 DAN 303-304 Choreography
 FDE 132 Drawing Techniques
 FDE 208 Fashion Drawing I
 IDE:all Interior Design studio courses
 IDE 431 Business Procedures
 APM 299 Master Class
 PAP 305 Painting, Intermediate
 SCU:all Sculpture studio courses
 SPE 121 Effective Speech

2. Ethics

Students should understand and appreciate a system of values upon which rests their professional and personal conduct. They should be able to examine fundamental moral beliefs and form rational ethical arguments, judgments and choices.

2.1 Option 1: The study of ethics permeates courses within each major in the School of the Arts. Additionally students will study units in selected courses that provide a basis upon which to make ethical professional choices.

School of the Arts courses that satisfy the Ethics requirement:

AFO 107-108 Introduction to the Arts
 AEN 310 Foundations in Art Education
 AEN 401 Elementary Materials and Practicum
 AEN 402 Secondary Materials and Practicum
 AEN 406 Art Education Seminar
 ARH 355 Symbolic Expression
 ARH 438 The Roots of Modernism
 ARH 457 Women, Art and Society
 ARH 469 Museum Studies
 ARH 493 Museum Internship
 CDE 353 Visual Communication Theory
 CDE 356 Studio Management
 DAN 209,210/DAN 409,410 Dance Workshop
 IDE 201-202 Interior Design Studios I and II
 IDE 431 Business Procedures
 MUE 290 Music in General Education
 MUE 391 Processes of Music Education
 SCU 211, 212 (Basic) Sculpture
 SCU 311,312 (Intermediate) Sculpture
 SCU 411, 412 (Advanced) Sculpture
 THE 113-114 Acting I

Option 2: Students may complete designated ethics courses offered outside of the school.

The following courses can be taken to fulfill the Ethics requirement:

PHI 211 History of Ethics
 PHI 212 Ethics and Applications
 PHI 327 Ethical Theory
 POS 341 History of Political Thought I
 RST 340 Global Ethics and the World's Religions
 With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

3. Quantity and Form

Students should be able to effectively apply codified information to resolve questions of quantity and form, especially as related to their discipline.

3.1 Within the major, students will be provided with information necessary for them to solve the questions relating to "Quantity and Form" that are specific to their field of study.

3.2 Option 1: Students may complete courses that will further develop logical thinking and the ability to understand quantitative processes.

Recommended courses that fulfill this requirement are:

MAT 131 Introduction to Contemporary Mathematics
 STA 208 Statistical Thinking
 Other MAT or STA credit courses may be used to fulfill this requirement.

With approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

Option 2: Competency in "Quantity and Form" may be recognized based on a student's secondary record or standardized test results prior to enrolling at the University.

Secondary-level course work that fulfills this requirement includes the completion of Algebra II or Geometry with a minimum grade of "B",

OR

Standardized test scores that fulfill this requirement are a SAT score of 550 or higher or the equivalent score on a comparable standardized test.

4. Science and Technology

Students should understand the importance that science and technology play in modern society and, in particular detail, those applications that have direct impact on their field of study.

- 4.1 Within each major, students will be taught about scientific data that impacts their field of study and how to analyze, understand, and apply this information.
- 4.2 All students will be required to complete one course in natural science having a laboratory component.

Recommended courses that satisfy the "Science and Technology" requirement include:

BIO 101,L101 General Biology
 BIO 102,L102 Science of Heredity and Laboratory
 BIO/ENS 103,L103 Environmental Science and Laboratory
 CHE 110 Chemistry in Context
 CHE 395 Topics:Chemistry in the News
 ENS 103,L103 Environmental Science and Laboratory
 GEO 203 L203 Physical Geography and Laboratory
 GEO 204,L204 Physical Geography and Laboratory
 PHE 382 Survey of Kinesiology and Physiology of Exercise
 DAN 407 Dancer as Teacher
 PHY 101,L101 Foundations and Frontiers of Physics and Laboratory
 PHY 107,L107 Wonders of Technology and Laboratory
 PHY 191 Topics:Experiencing Science
 Other BIO, CHE, and PHY courses may be used to fulfill this requirement.

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

5. Interdependence

Students should be aware of the similarities and differences that exist among the communities of the world and develop an understanding of and an appreciation for diverse cultures within our country and beyond its borders.

- 5.1 Within the School of the Arts, curricula concepts related to interdependence and its impact on specific disciplines are presented in many courses.

Courses offered within the School of the Arts that satisfy this requirement are:

AFO 105-106 Survey of World Art
 ARH 103/104 Survey of Western Art and
 One course with non-Western focus:
 ARH 145,146 Survey of Oriental Art
 ARH 207 Introduction to Non-Western Art
 ARH 335 Survey of Pre-Columbian Art and
 Architecture
 ARH 342 African-American Art
 ARH 350 African and Oceanic Art
 ARH 355 Symbolic Expression
 ARH 358 African Art and Architecture
 ARH 449 Studies in Asian Art
 DAN 313 Dance in Non-Western Cultures
 IDE 251-252 Design in Historic Interiors
 and Architecture
 IDE 351 Twentieth-Century Interiors and Architecture
 MHT 120 Musical Styles
 MHT 321,322 Music History
 MHT 271 Jazz History and Literature
 THE 307-308 History of the Theatre

- 5.2 Elective courses offered outside of the School that support understanding of interdependence include:
 AAS/HIS 105,106 Survey of African History
 AAS/ANT/USP 200 African Culture
 AAS 204 Africa in Transition
 AAS/GEO 333 Geography of Africa
 AAS/POS 356 African Government and Politics
 AAS/POS 357 Politics of Southern Africa
 AAS/POS 387 History of West Africa
 AAS/POS 389 History of Southern Africa
 AMS 301 Introduction to Native American Studies
 ANT 103 Cultural Anthropology
 ANT 201 The Evolution of Man and Culture
 ANT/SOC/WST 304 The Family
 ANT 305 Comparative Society
 ANT/INT 350 Peoples and Cultures of the World
 ANT 425 Religion, Magic, and Witchcraft
 EUC 307 Aspects of German Culture
 EUC 340/USP 350 Culture and Urbanism in Great
 European Cities
 FRE 306,307 French Civilization I,II
 GEO 207,208 World Regions
 GER 306,307 German Civilization I, II
 HIS 109, 110 Survey of Latin American History
 HIS 315,316 History of France
 HIS 317,318 History of Germany
 HIS 319,320 History of England
 HIS 321,322 History of Russia
 HIS 323 History of Spain and Portugal
 HIS 328 Modern Middle East
 HIS 378 History of Central America
 HIS 384 Latin America and World Affairs
 HIS 385 History of Mexico
 HIS 386 History of Brazil
 PHI 103,104 Introduction to the History of Western
 Philosophy
 PHI/RST 408 The Indian Tradition
 PHI/RST 410 The Chinese Tradition in Philosophy
 PHI/RST 412 Zen Buddhism
 POS 351 Governments and Politics of the Middle East
 POS 353 Latin American Governments and Politics
 POS 355 Asian Governments and Politics
 POS 452 Seminar in the Politics of Developing Areas
 RST 304 Introduction to Judaism
 RST 311 World Religions
 RST 320 Taoism
 RST 331 Christianity and Culture
 RST 407 Modern Jewish Thought
 SPA 306 The Civilization of Spain
 SPA 307 Latin American Civilization

Foreign language literature in English translation or in the original language also satisfy the Interdependence requirement.

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

6. Visual and Performing Arts

Students should have appreciation for the contribution of the visual and performing arts to the enhancement of the quality of life. Each student who graduates from the School of the Arts will have achieved proficiency in at least one discipline within the School of the Arts.

7. Humanities and Social Sciences

Students should have experience with courses that broaden the mind and expand consciousness through the study of social sciences and humanities.

- 7.1 Students will successfully complete at least 3 credits of course work in the social sciences and successfully complete at least 3 credits in the humanities, and successfully complete a minimum of 6 credits of course work in art history, history of dance, music history,

theatre history, or other courses related to the history of arts in the world.

- 7.1.1 Social Sciences
 AAS/SOC 105 Sociology of Racism
 AAS/ANT/USP 200 African Culture
 AAS/POS 302 Politics of the Civil Rights Movement
 AMS 301 Introduction to Native American Studies
 AMS 323 Social Attitudes in the Humanities
 ANT 103 Cultural Anthropology
 ANT 200 African Studies
 ANT 252 The Archeology of Richmond
 ANT/HIS 311 History of Human Settlement
 ANT 386/ENG 383 Introduction to Folklore
 CSE 315 Evolution of American Cities
 CSE 316 Urban Life in America
 HIS designation in the current *Schedule of Classes*
 POS 103, 104 U.S. Government
 POS 201 Introduction to Politics
 POS 202 Comparative Politics
 POS 203 International Relations
 POS 303 Political Attitudes and Behavior
 POS 310 Public Policy
 POS 311 Politics of the Environment
 POS/WST 318 Politics of Race, Class and Gender
 POS 321 Urban Government and Politics
 POS 344 Contemporary Political Theory
 POS 352 European Governments and Politics
 POS 353 Latin American Governments and Politics
 POS 354 Politics of the Former Soviet Union
 POS 355 Asian Governments and Politics
 POS 356 African Governments and Politics
 POS 362 Issues of World Politics
 PSY 101 Introduction to Psychology
 SSC 291 Issues in Social Science
 SSC 340 Human Sexuality
 SSC 350 The Construction of Culture
 SOC 302 Contemporary Social Problems
 SOC 340 Self and Society
 WST/PSY 335 Psychology of Women
 USP 304 Urban Social Systems
 USP 340 Urban Habitat
- 7.1.2a Humanities
 AAS/HIS 105,106 Survey of African History
 ECO 101 Introduction to Political Economy
 ECO 203 Introduction to Economics
 EDU 200 Education in American Society
 EDU 301 Human Development and Learning
 EDU 305 Educational Psychology
 GEO 102 Introduction to Cultural Geography
 GEO 207,208 World Regions
 GEO 322 World Political Geography
 GEO 451 Cultural Geography of Virginia Literature*
 PHI 101 Introduction to Philosophy
 PHI 103 Ancient Greek and Medieval Western Philosophy
 PHI 104 Modern Western Philosophy
 PHI 211 History of Ethics
 PHI 212 Ethics and Applications
 PHI 221 Critical Thinking
 POS 341,342 History of Political Thought
 RST 311,312 Religions of the World
 RST 340 Global Ethics and the World's Religions
- 7.1.2b Humanities, History of Arts in the World
 AFO 105-106 Art History Survey
 ARH (all courses)
 CDE 252 Twentieth-Century Visual Communications I
 CDE 253 Twentieth-Century Visual Communications II
 DAN 107 Dance Perspectives
 DAN 308 Dance History

* Literature courses include literature in English, or foreign literature in English translation, or foreign literature in the original language.

DAN 313 Dance in Non-Western Cultures
 FDE 319 Twentieth-Century Fashions
 IDE 251-252 Design in Historic Interiors and Architecture
 IDE 351 Design in Twentieth-Century Interiors and Architecture
 MHT 120 Introduction to Musical Styles
 MHT 271 Jazz History and Literature
 MHT 421-422 Survey of Music History
 THE 307-308 History of the Theatre
 THE 309-310 History of Costumes

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

School of the Arts Recommended General Education Courses for Non- School of the Arts Majors Entering Fall 1997 and Thereafter

The following courses will satisfy the "Visual and Performing Arts" General Education requirement for non-art majors. Consult an adviser for assistance in selecting courses that will best fulfill degree requirements.

A. Basic level courses designed specifically for non-arts majors.

- Art Education
 AEN 121-122 The Individual in the Creative Process
 AEN 301-302 Art for Elementary Teachers
 AEN 340 Exploring the Visual Arts
 AEN 408 Two-Dimensional Art Experiences
 AEN 409 Three-Dimensional Art Experiences
- Art Foundation
 AFO 121-122 Introduction to Drawing
- Communication Arts and Design
 CDE 191 Studio Topics in Communication Arts and Design
- Dance/Choreography
 DAN 171,172 T'ai Chi
 DAN 183-184 Introduction to Modern Dance Technique
 DAN 313 Dance in Non-Western Cultures
- Interior Design
 IDE 103-104 Introductory Studio Course
- Music
 APM 191-192 Class Lessons in Piano
 APM 193-194 Class Lessons in Voice
 APM 195-196 Class Lessons in Guitar
 MUC 111 MIDI Programming and Synthesis
 MHT 105-106 Introduction to Writing Music
 MHT243 Music Appreciation
- Painting and Printmaking
 PAP 155-156 Drawing and Painting, Basic
- Photography and Film
 PTY 243-244 Photography
 PTY 301 Mass Communications Photography (offered for Mass Communications Majors only)
- Theatre
 THE 107,108 Introduction to Stage Performance

B. Basic level courses open to both arts and non-arts majors.

- Art Education
 AEN 250 Computer Graphics
 AEN 353 Art and Perceptual Communication
 AEN 420 The Related Arts in Education
- Art Foundation
 AFO 101-102 Communication and Presentation
- Art History
 ARH 103,104 Survey of Western Art
 ARH 145,146 Survey of Oriental Art
 ARH 207 Introduction to Non-Western Art
 ARH 270, 271 History of the Motion Picture

Crafts

- CRA 201-202 Metalsmithing
- CRA 211-212 Jewelry
- CRA 221 Woodworking Techniques
- CRA 241 Ceramics: Handbuilding
- CRA 242 Ceramics: Wheelthrowing
- CRA 251, 252 Introduction to Glassworking
- CRA 261, 262 Beginning Textiles

Dance/Choreography

- DAN 105-106 Improvisation
- DAN 107 Contemporary Dance Perspectives
- DAN 111-112 Ballet Technique I
- DAN 114,214,314, 414 Summer Dance Workshops
- DAN 121,122/AAS 121,122 Tap Technique I
- DAN 126,127/AAS 126,127 African-Caribbean Dance I
- DAN 141,142 Ballroom Dancing
- DAN 243 Dynamic Alignment
- DAN 291 Topics in Dance
- DAN 308 Dance History
- DAN 313 Dance in World Cultures

Fashion Design and Merchandising

- FDE 290 Textiles for the Fashion Industry
- FDE 319 Twentieth-Century Fashions

Music

- APM 300-level Private Instruction: Principal and Secondary Performing Mediums
- APM 370 Large Ensembles (auditions required for some sections)
- APM 390 Small Ensembles (auditions required for all sections)
- MUC 112 Synthesizer and Composition
- MHT 120 Introduction to Musical Styles
- MHT 250/AAS 250 Introduction to African-American Music
- MHT 280 Survey of Twentieth-Century American Popular Music

Photography and Film

- PTY 233 Media Arts Survey

Sculpture

- SCU 211, 212 Sculpture

Theatre

- THE 103 Stagecraft
- THE 104 Costume Construction
- THE 211-212 Introduction to Drama
- THE 221 Basic Scene Design/THE L221 Basic Scene Design Laboratory
- THE 229 Introduction to Lighting Design
- THE 300 The Enjoyment of Theatre
- THE 303/AAS 303 Black Theatre

C. Advance level courses open to both arts and non-arts majors.

Some require special permission/audition.

Dance/Choreography

- DAN 221,222 Tap Technique II
- DAN 319,320 Video/Choreography Workshop
- DAN 343 Body Imagery

Sculpture

- SCU 491 Topics in Sculpture

General Information

Students who have matriculated in a professional curriculum receive enrollment preference for courses in their program. However, unless otherwise indicated, all courses are open to any student in the University.

Because of the sequence in which course work is arranged, only transfer students will be considered for mid-year admission. With the exception of art history courses, all courses must be taken in their numerical sequence unless approved by the chair of the department in which they are listed.

In many of the courses, a considerable amount of work is done outside the classroom. This work is done in addition to the work done in the scheduled classes students are required to attend. Departments within the school

reserve the right to retain examples of student work for permanent collections. Before enrollment, students should contact the appropriate department chair for a more detailed curriculum outline than that which appears in this *Bulletin*.

Undergraduate Credit by Examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the School of the Arts provides its students the opportunity to accelerate their education through "credit by examination." The conditions under which credit by examination may be given and the procedures are outlined in Part II of this *Bulletin*.

Honors Program

The VCU Honors Program was established to attract gifted students and to provide them with a challenging opportunity to achieve their highest academic potential. This program is open to all qualified undergraduate students. For a detailed description of qualifications and requirements see Part VII of this *Bulletin*.

500-Level Courses

500-level courses are available only to upper division undergraduate students with the approval of the chair of the department in which the course is offered.

Courses in Arts

Unless otherwise indicated, courses must be taken in numerical sequence.

ART 001 Open Studio Workshop. Semester course; Hours to be arranged. no credit.

ART 190 Advanced Workshop, Drawing. Semester course; 1 lecture and 6 studio hours. 3 credits. Special summer work in drawing for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Must be taken concurrently with ART 191 and 192. Students are admitted only by invitation of the dean of the School of the Arts.

ART 191 Advanced Workshop, Design. Semester course; 1 lecture and 9 studio hours. 4 credits. Special summer work in design for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Must be taken concurrently with ART 190 and 192. Students are admitted only by invitation of the dean of the School of the Arts.

ART 192 Advanced Workshop, Art History. Semester course; 2 lecture hours. 2 credits. Special summer work in art history for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Must be taken concurrently with ART 190 and 191. Students are admitted only by invitation of the dean of the School of the Arts.

ART 370, 371 Topics in Art. Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the *Schedule of Classes* for specific topics to be offered each semester.

ART 392 and 492 Independent Study. Semester courses; 3-18 studio hours. 1 to 6 credits. Prerequisite: Consent of department head and instructor. This course will be limited to those few students who have

demonstrated an unusual level of ability and intense commitment to a particular area. The student must be enrolled in a regularly scheduled 300-level studio course. Offered to School of the Arts majors only.

ART 430 Guided Study Afield. 1-9 credits. Permission of instructor required. Designed to enhance the student's knowledge by providing first-hand experience with the most significant contribution of aesthetic import within the geographic areas traveled.

Art Foundation Program

Dennis H. Rexroad

Associate Professor and Director (1989) BFA 1965 Southwest Missouri State University; MFA 1968 Kansas University

All beginning and transfer students in the visual arts, when necessary, must enroll in the Art Foundation Program. This program is the prerequisite which provides the basic concepts, skills, and experiences necessary for admittance to advanced professional studio work in each department.

Students accepted and placed in the Art Foundation Program do not achieve departmental affiliation until after the screening of portfolios during the spring semester of the freshman year. At that time the student can apply to the department of his or her choice. Departmental acceptance is based on individual student performance and competency in the chosen area.

Art Foundation Curriculum

	Credits	
	1st Sem.	2nd Sem.
Studios		
AFO 101-102 Communication and Presentation	2	2
AFO 103-104 Communication Vehicles	2	2
AFO 109-110 Drawing Vehicles	2	2
AFO 111-112 Drawing Studio	2	2
General Studies		
AFO 105-106 Survey of World Art	4	4
AFO 107-108 Introduction to the Arts		
OR Electives	1	1
ENG 101 Composition and Rhetoric	3	
Academic Elective		3
	16	16

Courses in Art Foundation

AFO 101-102 Communication and Presentation. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. A foundation course with the emphasis on conceptualization, sensing, and knowing. This course includes studies in preconceptions, value systems, visual semantics, attitudes, criticism, and analysis of visual phenomena. This course is also an introduction to the concepts and nature of materials. For beginning students in the School of the Arts. Offered to art majors only.

AFO 103-104 Design Fundamentals. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. A foundation course with emphasis on systems and nonsystems of spatial order, as well as color applications and theory. For beginning students in the School of the Arts. Offered to art majors only.

AFO 105-106 Survey of World Art. Continuous course; 4 lecture hours. 4-4 credits. A survey of the history and development of painting, sculpture, architecture, and related visual arts of major world cultures, including European, American, Oriental, African, Islamic, and Pre-Columbian. For beginning students in the School of the Arts only.

AFO 107, 108 Introduction to the Arts. Semester courses; 1 lecture hour. 1, 1 credit. An orientation course designed to provide a compre-

hensive understanding of the role of the visual arts as a significant contributing factor in the creation of a meaningful human environment. Attendance at selected music and theatre department performances required. For beginning students in the School of the Arts. Offered to art majors only.

AFO 109-110 Drawing Fundamentals. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. A foundation course with the emphasis on traditional drawing, including perspective, anatomy, and artistic judgment. For beginning students in the School of the Arts. Offered to art majors only.

AFO 111-112 Drawing Studio. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. A foundation course with the emphasis on invention and imagination. This course is designed to challenge and develop the student's facility for combining known phenomena and personal imagery. For beginning students in the School of the Arts. Offered to art majors only.

AFO 121-122 Introduction to Drawing. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. An introduction to the fundamentals of freehand drawing with an emphasis on representational drawing skills, perception, and traditional drawing materials. Not for art majors. Does not fulfill Art Foundation Program core requirements.

Department of Art Education

Charles F. Bleick

Associate Professor and Chair (1976) BA and MA California State University, Chico; PhD 1979 University of North Texas

Burton, David E. (1977) *Associate Professor* BFA Syracuse University; MA New York University; PhD 1973 Pennsylvania University

Landis, Alan L. (1968) *Professor* BS Indiana University; MEd and DED 1968 Pennsylvania State University

Shumard, Sally L. (1995) *Assistant Professor* BS 1979 Miami University; MA 1992 and PhD 1995 Ohio State University

Wright, A. James (1980) *Associate Professor* EdD 1972 Pennsylvania State University

Emeriti Faculty

Hynson, Priscilla C. *Associate Professor Emerita* BS East Carolina University; MA and EdD George Peabody College

Tisinger, Betty H. *Professor Emerita* AB Berea College; MA Madison College; DEd Pennsylvania State University

The Department of Art Education offers an undergraduate program which leads to a bachelor of fine arts degree. The program gives the student the opportunity to specialize in art education while emphasizing a strong background in the arts to help the student develop artistic sensitivity, critical analysis, perception and interpretation of art forms. The program assists in developing expertise in the utilization of electronic media in an increasingly technological world.

The Art Education Program is an Approved Teacher Preparation Program that complies with the professional standards of the Virginia Department of Education and the Southern Association of Colleges and Schools. It is further accredited by the National Council for Accreditation of Teacher Education and the National Association of Schools of Art and Design. All of these agencies assure the highest professional program standards.

Most art education students enter the teaching profession and teach art in either elementary, middle or high school. Others pursue further education to work as art consultants, art therapists, arts administrators, museum personnel, college teachers, and in other art-related business positions. Graduates of the program are eligible for teacher licensure in grades NK-12.

Reciprocity agreements with many states greatly expand job opportunities throughout the country.

Admission to the Art Education program follows successful completion of the freshman foundations program, or, in the case of transfer students, equivalent preparation from other institutions.

Degree Requirements in Art Education

	<i>Credits</i>
Foundation Program Studios	16
Professional Education	32
Includes Art Education Methods, Human Development, and Student Teaching	
Studios and Approved Electives	37
General Studies	39
Includes English, Art History, Literature, Introduction to the Arts, Mathematics, Laboratory Science, American History, Social Science and Humanities	
Health and Physical Education	4
	128

Courses in Art Education

AEN 121-122 The Individual in the Creative Process. Continuous course; 1 lecture, 1 seminar, and 2 studio hours. 3-3 credits. Analysis of creative processes via reflection on the self-in-action. Participation in art experiences as a means to the interpretation and enjoyment of art forms, and the implication of art for society. The course aims to increase perceptual openness, sensitivity to, and understanding of the artistic experience. Not offered for credit to art majors.

AEN 201 Art Education Service Learning. Semester course; 17 laboratory/lecture hours. 1 credit. Prerequisites: Completion of freshman year Art Foundation and math requirement. May be repeated for a total of three credits. A preparatory experience for students interested in teaching art as their professional career. Students will work on a one-to-one basis as mentors with school children in selected area schools. Students will meet in a class five times on campus and work at designated times with children one hour a week for 12 weeks.

AEN 250 Computer Graphics. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: Permission of instructor. Students will gain competency in using a computer as a tool for creating electronic imagery and as a filtering mechanism for traditional media. Scanning and manipulating photos will be explored, as will the potential and limitations for computers as they pertain to art. Successfully integrating computers into visual arts classrooms will be addressed.

AEN 301-302 Art for Elementary Teachers. Continuous course; 1 lecture, 1 seminar, and 2 studio hours. 3-3 credits. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

AEN 310 Concepts of Art Education I: Foundations of Art in Education. Semester course; 3 lecture hours. 3 credits. An examination of art education within the curricular structure of educational programs. Students will develop an understanding of the historical, philosophical, and sociological foundations of art in education, including art education's development and current roles. For art education majors only or by approval of the department chair.

AEN 311 Concepts of Art Education II: Curriculum and Instructional Procedures. Semester course; 2 lecture and 3 studio hours. 3 credits. Writing Intensive. A study of the principles of learning instruction, and curriculum in art education programs. Students will develop teaching competencies through micro-teaching experiences, analysis of instructional methods, and teaching styles. For art education majors only or by approval of the department chair.

AEN 340 Exploring the Visual Arts. Semester course; 1 lecture, 1 seminar, and 2 studio hours. 3 credits. Exploration of the nature and history of the arts, to include direct involvement in creative studio processes and experiences designed to increase aesthetic awareness, analysis, and evaluation skills.

AEN 353 Art and Perceptual Communication. Semester course; 3 lecture hours. 3 credits. A study of the function of art as communicative media through the senses. Emphasis will be placed on the analysis of the principles of art and design that affect the perception of various art forms.

AEN 401 Concepts In Art Education III: Elementary Materials and Practicum. Semester course; 3 lecture and 3 studio hours. 4 credits. Writing intensive. A preparatory experience with observation and participation in art programs in elementary grades and nontraditional settings prior to student teaching. This course explores art materials and techniques suitable for this level, examines developmental performance levels and analyzes evaluation methods appropriate for art. For art education majors only, or by the approval of the department chair.

AEN 402 Concepts In Art Education IV: Secondary Materials and Practicum. Semester course; 3 lecture and 3 studio hours. 4 credits. Writing intensive. A preparatory experience with observation and participation in art programs in middle school, secondary school, and nontraditional settings prior to student teaching. This course explores art materials and techniques suitable for these levels, examines developmental performance levels, and analyzes evaluation methods appropriate for art. For art education majors only, or by approval of the department chair.

AEN 404 Student Teaching Seminar. 3 seminar hours. 3 credits. A seminar concurrent with student teaching which gives students an opportunity to discuss and evaluate their progress in teaching assignments and other related activities. For art education majors only.

AEN 408 Two-Dimensional Art Experiences. Semester course; 1 seminar and 4 studio hours. 3 credits. The course explores the media, techniques, and concepts of drawing, painting, and printmaking. Not offered for credit to art majors.

AEN 409 Three-Dimensional Art Experiences. Semester course; 1 seminar and 4 studio hours. 3 credits. Exploration of sculptural concepts with three-dimensional materials such as wood, metal, clay, fiber, plaster, plastic, and glass. Not offered for credit to art majors.

AEN 411-412 Fashion Media. Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Exploration of design concepts, media techniques, and actual execution in fabrics, jewelry, and ceramics with considerations for application to fashion design. For fashion design majors.

AEN 420 The Related Arts In Education. Semester course; 1 lecture, 1 seminar, and 2 studio hours. 3 credits. Investigation of contemporary patterns of expression which combine the visual and performing arts and their implications for elementary, middle, and secondary schools. Involvement in aesthetic experiences will serve as a vehicle for analysis of interrelationships among expressive forms and provide concepts for developmental growth in relation to curriculum designing. Open to all majors.

AEN 430 The Arts and Humanities in Education. Semester course; 1 lecture, 1 seminar, and 2 studio hours. 3 credits. Exploration of the perceptual and creative facets of arts and humanities curricula design in middle and secondary schools. The course establishes common denominators of human experience as a basis for integrating traditional disciplines into new patterns.

AEN 450 Art for the Exceptional Student. Semester course; 2 lecture and 3 studio hours. 3 credits. A study of the unique characteristics of exceptional students as related to involvement in the arts. The course examines disabled, aged, gifted, talented, and other exceptional learners, and may include practicum and field experiences. Open to all majors.

AEN 491 Special Topics. Semester course; variable credit. May be repeated for a maximum of nine credits with different content. A seminar and/or workshop offered on a variety of art education issues not

included in the regular curriculum. See the *Schedule of Classes* for particular topics covered each semester.

AEN 501-502 Concepts in Art Education. Continuous course; 1 seminar and 4 studio hours. 3-3 credits. A sequence of studies organized around six major components: communications, expressive media, conceptual expression, teaching strategies, teacher-affective attributes, and self-managing abilities.

AEN 508 Two-Dimensional Art Experiences. Semester course; 2 seminar and 3 studio hours. 3 credits. The course explores the media, techniques, and concepts of drawing, painting, and printmaking. Not offered for credit for studio art majors.

AEN 509 Three-Dimensional Art Experiences. Semester course; 2 seminar and 3 studio hours. 3 credits. Not offered for credit for studio art majors. Exploration of sculptural concepts with three-dimensional materials such as wood, metal, clay, fiber, plaster, plastic, and glass.

AEN 510 Experiences in the Arts. Semester course; 2 lecture and 3 studio hours. 3 credits. Explores traditional and contemporary forms of expression in the visual, literary, and performing arts. Leads students to discover relationships among apparently independent art forms using such activities as lectures, guest speakers, and required attendance at events in the arts.

AEN 520 Teaching Concepts Through the Arts. Semester course; 1 lecture, 1 seminar, and 3 studio hours. 3 credits. Open to all graduate students. Students will investigate and compare traditional and contemporary patterns of expression, develop experiential techniques for teaching concepts, and participate in a series of activities that reveal relationships among the arts and other subject areas. Seminars will include guests from the visual, performing, and literary arts.

AEN 550 Art for the Exceptional Learner. Semester course; 2 lecture and 3 laboratory hours. 3 credits. A study of exceptional learners including handicapped, gifted and talented, aged, and others, and their participation in and appreciation for the visual arts. Courses may include practicum and field experiences.

AEN 553 Art and Perceptual Communication. Semester course; 3 lecture hours. 3 credits. Explores art and perception as a means of effectively communicating through the senses. Emphasizes the analysis of the principles of art and design that affect the perception of art, advertising, and other media. Investigates light, color, perception, illusions, and other related topics.

AEN 591 Topics in Art Education. Semester course; variable; 1-3 credits. May be repeated for a maximum of nine credits. The course will explore selected topics of current interests or needs relative to art education. See *Schedule of Classes* for specific topic to be offered each semester.

Department of Art History

Bruce M. Koplin

Associate Professor and Chair (1964) BFA 1961 and MFA 1963
Virginia Commonwealth University

Brownell, Charles (1992) *Professor* BA Oakland University; MA University of Delaware; Program on the Historic Houses of England Attingham Summer School; MPhil 1975 and PhD 1976 Columbia University

Crowe, Ann G. (1989) *Associate Professor* BA 1952 Duke University; MA 1971 University of Colorado; PhD 1989 Stanford University

Farmer, James D. (1992) *Assistant Professor* BFA 1982, MA 1986 and PhD 1992 University of Texas, Austin

Hill, Sharon Jones (1969) *Associate Professor* BA 1959 and MA 1962 Pennsylvania State University; PhD 1973 New York University

Hobbs, Robert C. (1991) *Professor and Eminent Scholar* BA 1969 University of Tennessee, Knoxville; PhD 1975 University of North Carolina, Chapel Hill

Jacobs, Fredrika H. (1984) *Associate Professor* BA 1975 Smith College; PhD 1979 University of Virginia

Lawal, Babatunde (1992) *Professor* BA 1966 University of Nigeria; MA 1968 and PhD 1970 Indiana University, Bloomington

Phillips, Richard E. (1995) *Assistant Professor* BA 1973 University of California, Irvine; MA 1975 University of California, Santa Barbara; PhD 1993 University of Texas, Austin

Risatti, Howard (1980) *Professor* BM and MM Roosevelt University; MA and PhD 1978 University of Illinois

Smith, Rosemary T. (1994) *Assistant Professor* BA 1977 Michigan State University; MA 1986 and PhD 1996 University of Virginia

Emeriti Faculty

Perry, Regenia A. (1967) *Professor Emerita* BS Virginia State College; MA and PhD Case Western Reserve University

The Department of Art History offers its majors a program which acquaints them with the humanistic discipline of art historical inquiry. While providing students with the opportunity for a broad education drawing on the liberal arts and humanities, the department also emphasizes a close bond with the studio and performing arts and enjoys a close relationship with the other departments in the School of the Arts.

Recognizing the diverse interests of undergraduate students and the varied practical applications of art history, the department offers its majors a choice among four distinct curricula culminating in either the bachelor of arts (BA) or the bachelor of fine arts (BFA) degree. The BA degree (curricula A, B, or C) focuses on academic disciplines in the liberal arts, while the BFA degree (curriculum D) integrates the study of art history with art studio.

Curriculum A is a program with a liberal arts curriculum composed of an academic course of study exposing the student to the scholarship and research methods of not only art history, but related disciplines in the humanities. This program gives students the best possible background for future graduate work in art history.

Curriculum B, with strong liberal arts and studio components, is a comprehensive architectural history program which emphasizes the study of both Western and non-Western architecture. This program affords the student an excellent background for graduate work in architectural history and/or art history, as well as career opportunities in the field. Given the region's rich and diverse architectural resources, this program provides an unusual opportunity for on-site studies. By providing the student with additional training in art history, studios – such as architectural presentation graphics and urban studies and planning, this program offers a well-rounded knowledge of architectural history.

Curriculum C is a program with a museum studies orientation which uses the superb resources in Richmond and throughout the state. It is a unique program because it provides the student with the opportunity to intern at a regional museum.

Curriculum D, with a studio focus, permits the student to study art history with simultaneous involvement in the studio areas. The opportunity to delve into the interrelationships between the study of art and the actual creation of art is an ideal program for the artist who is deeply interested in discovering the past and understanding the present.

Along with these curricula, the department also offers a minor in art history, consisting of 18 credits in the minor field. These credits must include either six in the survey of western art, or eight in the survey of world Art;

plus 12 credits in 4 additional period courses. The student must select one course each from the following categories: (1) Classical, (2) Medieval, (3) Renaissance, (4) Baroque/Eighteenth Century, (5) Nineteenth and Twentieth Century, and (6) non-Western.

Degree Requirements in Art History

	<i>Credits</i>
Art Historical Curriculum A	
Studios	7
Art History	42
Aesthetics or Criticism	3
General Studies	
English 101,200	6
Literature	6
German or applicable Romance language	14
History	15
Archaeology, Religion, Anthropology, or Cultural Geography	9
Electives to include three credits in mathematics and four credits in laboratory science	24
	126
Architectural History Curriculum B	
Studios	
Foundation Program	8
Interior Design Graphics	6
Photography	4
Architectural History	4
Art History	18
Aesthetics or Criticism	3
General Studies	
German or applicable Romance language	14
History	12
English 101,200	6
Literature 201-202	6
Anthropology 103	3
Archaeology 105	3
Science	
Physics 101, L101	4
Geology 105, L105	4
Religious Studies 311 or 312	3
Urban Studies 116, 240, 513	8
Electives to include three credits in mathematics	6
	132
Museum Studies Curriculum C	
Studios	
Fine Arts	6
Photography	2
Art History	33
Museum Studies	15
Aesthetics or Criticism	3
General Studies	
English 101, 200	6
Literature	6
German or applicable Romance language	14
History	12
Archaeology, Religion, Anthropology or Cultural Geography	12
Business Environment 121	3
Urban Studies 116, 240	6
Electives to include three credits in mathematics and four credits in laboratory science	9
	127
Art Historical/Studio Curriculum D	
Studios	
Foundation Program	16
Fine Arts	55

Art History	29
Introduction to the Arts	2
Aesthetics or Criticism	3
General Studies	
English 101,200	6
Literature	6
German or applicable Romance language	10
History	6
Electives to include three credits mathematics and four credits in laboratory science	7

 140

Courses in Art History

ARH 103, 104 Survey of Western Art. Semester courses; 3 lecture hours. 3, 3 credits. First semester: Prehistoric through Gothic. Second semester: Italian Renaissance through Modern. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

ARH 145, 146 Survey of Oriental Art. Semester courses; 3 lecture hours. 3, 3 credits. First semester: the art of India, Southeast Asia, and the Middle East. Second semester: the art of China, Korea, and Japan. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

ARH 207 Introduction to Non-Western Art. Semester course; 3 lecture hours. 3 credits. Art will be presented as an integral aspect of each culture from the areas of China, Japan, Africa, Oceania, Native America, and Pre-Columbian Central and South America. Aesthetic appreciation will be enhanced through a presentation of various philosophies, customs and values. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

ARH 209, 210 American Art and Literature. Semester courses; 3 lecture hours. 3, 3 credits. A general survey of the form and content of American art and literature with special emphasis on the relationships between visual and literary works. First semester: before 1865. Second semester: since 1865.

ARH 211, 212 Western World Art and Literature. Semester courses; 3 lecture hours. 3, 3 credits. A general survey of the form and content of Western world art and literature with special emphasis on the relationships between visual and literary works. First semester: ancient Greece through the sixteenth century. Second semester: seventeenth century to the present.

ARH 270, 271 History of the Motion Picture. Semester courses; 3 lecture hours. 3, 3 credits. The history of development of the motion picture from its early beginnings to the present, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

ARH 300 Prehistoric and Ancient Art and Architecture. Semester course; 3 lecture hours. 3 credits. A survey of the artistic expressions of the major prehistoric and ancient cultures of Europe, the near East, Egypt, and the Aegean.

ARH 301 Art and Architecture of Ancient North America. Semester course; 3 lecture hours. 3 credits. A survey of the major artistic traditions of ancient America, north of Mexico, including Woodlands, Mississippian, Plains, Eskimo, Northwest Coast, and the Southwest.

ARH 305 Classical Art and Architecture. Semester course; 3 lecture hours. 3 credits. A survey of the development of Greek, Etruscan, and Roman architecture, sculpture, painting, and the minor arts from their beginnings to the early fourth century A.D.

ARH 310 Medieval Art and Architecture. Semester course; 3 lecture hours. 3 credits. Survey of Western art and architecture between A.D. 300 and 1400.

ARH 315 Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. An examination of the Renaissance in Italy and Northern Europe. Painting, sculpture, and architecture of the fourteenth, fifteenth, and sixteenth centuries.

ARH 316 Northern Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. Painting, architecture, and sculpture during the North European Renaissance.

ARH 317, 318 History of Architecture. Semester courses; 3 lecture hours. 3, 3 credits. First semester: major architectural forms from ancient Egypt through Medieval period. Second semester: architecture in Europe and America from the Renaissance to the present.

ARH 320 Baroque and Rococo Art and Architecture. Semester course; 3 lecture hours. 3 credits. The art and architecture of Italy and northern Europe between 1600 and 1750.

ARH 325 Nineteenth-Century Art and Architecture in Europe. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 103, 104. Study of European art and architecture between 1770 and 1900.

ARH 330 Twentieth-Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. A survey of twentieth-century art with emphasis on architecture, painting, and sculpture.

ARH 335 Pre-Columbian Art and Architecture. Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions of ancient America (i.e., Maya, Aztec, and Inca). The course concentrates on Meso-America and the Andean Region.

ARH 338 Colonial Art and Architecture of Latin America. Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions in Latin America from the sixteenth to the end of the eighteenth century.

ARH 339 Modern and Contemporary Art and Architecture of Latin America. Semester course; 3 lecture hours. 3 credits. A study of nineteenth and twentieth-century art in Latin America focusing on the major movements and artists of Mexico, the Caribbean, Central and South America.

ARH 340 Art and Architecture of the United States. Semester course; 3 lecture hours. 3 credits. A survey of painting, sculpture, and architecture from the Colonial period to the present.

ARH 342/AAS 342 African-American Art. Semester course; 3 lecture hours. 3 credits. A study of the art forms produced by Americans of African origin from the seventeenth century to the present with an emphasis on contemporary trends in black art.

ARH 350/AAS 413 African and Oceanic Art. Semester course; 3 lecture hours. 3 credits. A study of the artifacts of some of the major art-producing tribes of Africa and Oceania.

ARH 355 Symbolic Expression in the Visual Arts. Semester course; 3 lecture hours. 3 credits. The nature of myth and allegory is presented through an introduction to central themes in Western art, such as saints, heroes, gods, and archetypes with some comparisons to non-Western art.

ARH 358/AAS 358 African Art and Architecture. Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American Art.

ARH 360 Introduction to Conservation. Semester course; 3 lecture hours. 3 credits. An introduction to the art and science of art conservation. The course is designed to acquaint artists and art historians with the basic methods of deterioration, examination, and treatment of works of art.

ARH 370 History of Animated Film. Semester course; 3 lecture hours. 3 credits. The history of animation as an art form, from early experimental to popular culture to independent animation. Design, structure, and technique are considered.

ARH 401 Art and Architecture of the Ancient Near East. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth analysis of the artistic developments in Mesopotamia, Iran, Anatolia, and the areas peripheral to these cultural centers from B.C. 6000 to B.C. 300.

ARH 402 Art and Architecture of Ancient Egypt. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth analysis of the development of Egyptian styles from the origins of ancient Egyptian culture to its absorption in the Roman Empire. The major iconographical themes, both religious and secular, will be studied.

ARH 404 Studies in Prehistoric and Ancient Art. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 405 Studies in Greek, Etruscan, and Roman Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 412 Early Medieval Art and Architecture. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An investigation of medieval concepts of the late Roman and Byzantine Empires, and the art of Migrations. Subsequent developments in Carolingian, Ottonian, and Romanesque art and architecture are the main topics to be considered.

ARH 413 Gothic Art. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. Origins and developments of the Gothic style with emphasis on the architecture and sculpture of France.

ARH 414 Studies in Medieval Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subject to be offered each semester.

ARH 415 Early Italian Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An investigation of painting, sculpture, and architecture of the *Duecento*, *Trecento*, and *Quattrocento* in Italy.

ARH 417 The High Renaissance. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. Intensive consideration of the great masters of Italian art in the early sixteenth century.

ARH 419 Studies in Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated. An in depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subject to be offered each semester.

ARH 420, 421 The Baroque In Northern Europe; The Baroque In Southern Europe. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: 3 hours of art history or permission of instructor. First semester: an investigation of the painting, sculpture, and architecture of France and the Low Countries. Particular emphasis will be given to the diverse characteristics of the aristocratic and bourgeois stylistic trends of the period. Second semester: an investigation of the painting, sculpture, and architecture of Italy, Spain, Germany, and Austria. The relationship of church and state will be a primary theme of the course.

ARH 422 Spanish Painting: El Greco through Picasso. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 103, 104 or AFO 105, 106 or by permission of the instructor. This course addresses the question of the "Spanishness" of Spanish art. The careers of El Greco, Ribera, Zurbarán, Murillo, Velázquez, Goya, Dali, Miro and Picasso are examined in relation to the traditional xenophobia of Spanish culture and the paradox of Spanish openness to the art of Italy, Flanders and France.

ARH 423 Rococo and Other Eighteenth-Century Art. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth analysis of Rococo painting, sculpture, and architecture in Central Europe and a study of major movements of this period in France and England.

ARH 424 Studies in Baroque and Rococo Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 425, 426 Neoclassicism, Romanticism, Realism, and Impressionism through Fin-de-Siecle. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: 3 hours of art history or permission of instructor. First semester: a detailed analysis of European art during the first half of the nineteenth century with special emphasis on French and English painting. Consideration will also be given to artistic and cultural interrelationships marking the transition from the eighteenth to the nineteenth century. Second semester: a detailed analysis of European art during the latter nineteenth century. Consideration will also be given to artistic and cultural interrelationships heralding the transition to the twentieth century.

ARH 427 Renaissance Art and Architecture of Colonial Latin America, 1500-1650. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth study of the most important contributions of Renaissance Ibero-American art throughout the Western Hemisphere in architecture, sculpture, and painting.

ARH 428 Baroque and Neoclassic Art and Architecture of Colonial Latin America. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth study of the most important contributions of Baroque and Neoclassic Ibero-American art throughout the Western Hemisphere in architecture, sculpture, and painting.

ARH 429 Studies in Nineteenth-Century Art. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 430 Modern Painting. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An analysis of the major movements in twentieth-century painting.

ARH 431 Modern Sculpture. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. The evolution of twentieth-century sculpture considering major movements and artists.

ARH 433 Modern Architecture. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An investigation of major architectural periods and achievements in commercial and residential designs from 1850 to the present; tracing the development of the International Style, traditional architecture, the evolution of the skyscraper, Art Nouveau, and the works of Henry Hobson Richardson, Louis Sullivan, and Frank Lloyd Wright.

ARH 435, 436 Contemporary Art I, II. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: 3 hours of art history or permission of instructor. First semester: an in-depth examination of art from 1940-1960. Will include discussion of background and context. Second semester: a continuation of detailed analysis of art from 1960 to the present.

ARH 438 The Roots of Modernism. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 103, 104 or AFO 105, 106, or by permission of the instructor. This course focuses on the revolutionary period in art and society (1884-1930) which follows the transformation of Neo-classicism by J. L. David. The development of the Modern tradition: Realism, Impressionism, Postimpressionism, Cubism, Fauvism, Dada and Surrealism, is examined against the forces of the larger world in which it occurs.

ARH 439 Studies in Twentieth-Century Art. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of

selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 440/AAS 440 Contemporary Art and Architecture of Africa. Semester course; 3 lecture hours. 3 credits. A study of the impact on African art and architecture of Colonialism, urbanization, and modernization. Special emphasis is placed on the search for a new identity by contemporary African Artists.

ARH 441 Architecture of the United States. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth investigation of major architectural developments from the Colonial period to the present, including an analysis of European prototypes.

ARH 442 Architecture in Richmond. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. History and origins of Richmond area architecture.

ARH 443 Folk Art of the United States. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An examination of the development and history of three centuries of tradition in folk art applicable to the five major areas: painting, sculpture, furniture, decorated household objects, and architectural decoration.

ARH 444 Studies In the Art of the United States. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 445 The Art of India. Semester course; 3 lecture hours. 3 credits. Prerequisite: General background in art, history, or religion of the area. The Indus Valley civilization through Maurya, Sunga, Kushana, Andhra, Gupta, and Pallava periods.

ARH 447 The Art of Southeast Asia. Semester course; 3 lecture hours. 3 credits. Prerequisites: ARH 145, 146, or general background in the art, history, or religion of the area. The art of Burma, Malaya, Thailand, Cambodia, Indochina, and Indonesia.

ARH 449 Studies in Asian Art. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 450 Art and Architecture of Mesoamerica. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth study of the artistic traditions of Mesoamerica (i.e., Maya, Aztec, and Olmec).

ARH 451 Art and Architecture of Andean America. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An in-depth study of the Pre-Columbian art production of the Andean region (i.e., Chavin, Moche, and Inca art).

ARH 452 Studies in Pre-Columbian Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period (Ancient America). See the *Schedule of Classes* for specific subjects to be offered.

ARH 454 Studies In African and Oceanic Art. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 455 Aesthetics and Modern Theories of Art. Semester course; 3 lecture hours. 3 credits. Writing intensive. An investigation of modern aesthetic theories and concepts in art with a foundation in premodern aesthetics.

ARH 456 Ideas and Criticism in Art. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An in-depth examination of modern concepts in the literature of art criticism with particular emphasis on the principal writings of leading American critics.

ARH 457/WST 457 Women, Art and Society. Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?"

ARH 459 Studies in Aesthetics, Theory, and Criticism of Art. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected topics. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 460 Art and Architecture in Latin America, 1780-1915. Semester course; 3 lecture hours. 3 credits. This course studies the impact of the Enlightenment, Independence, and the struggles against foreign intervention and for social justice and national and regional identity in the art and architecture of Latin America from the inception of Neoclassicism under the academies of Mexico and Brazil to the inception of Modernism during the first World War.

ARH 461 Art and Architecture in Latin America, 1915 to the Present. Semester course; 3 lecture hours. 3 credits. This course studies the finest expressions of modern Latin American art within the context of the arrival of Modernism in art, improved communications and travel, the growth of the middle class, population explosion, industrialization, urbanization, movements for reform and revolution, the struggle against economic and cultural dependence and homogenization. The course is hemispheric in scope but devotes special attention to Mexico, Brazil, and Argentina.

ARH 469 Studies in Museum Methods. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An in-depth examination of selected topics. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 470 History of Animated Feature Film. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An analysis of selected animated feature films, including animation combined with live action. Both American and foreign films will be considered.

ARH 471 Film Theory. Semester course; 3 lecture hours. 3 credits. Theories and criticism dealing with the medium, form, function, and psychology of film. Students will examine the medium through reading and discussion of such film theorists and aestheticians as Munsterberg, Eisenstein, Arnheim, Bazin, Kracauer, Burch, and Langer as well as through a comparison of film and the other arts.

ARH 472 History of Photography. Semester course; 3 lecture hours. 3 credits. Prerequisite: 3 hours of art history or permission of instructor. An investigation of the basic trends in the history of photography. This course will deal with the chronological development of the art, the role of the photographer, the properties of photography which make it unique, and those that ally it to the other visual arts.

ARH 474 Studies in Film. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected topics. See the *Schedule of Classes* for specific subjects to be offered each semester.

ARH 489 Topics in Advanced Art History. Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth study of a selected topic in art history not included in the curriculum. See the *Schedule of Classes* for specific topics to be offered each semester.

ARH 493 Museum Internship. Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated with changing content for a maximum of twelve credits. Prerequisites: ARH 469 and permission of the chair of the Department of Art History. Fieldwork in a local or regional museum.

ARH 497 Directed Research Project. Semester course; 3 credits. Prerequisite: Permission of instructor and department chair. Writing intensive. Advanced individual work on a subject to be formulated in writing by the student and the instructor.

ARH 502 Historical Preservation and Architectural History. Semester course; 3 lecture hours. 3 credits. An introduction to the methods or research, record keeping and reporting used in architectural history, and to the evolution of the discipline, especially in relation to historic preservation.

ARH 504 Advanced Studies in Prehistoric and Ancient Art. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of artistic development in one or more ancient and prehistoric cultures, such as in Africa, Asia, Europe, or the Americas. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 505 Advanced Studies in Greek, Etruscan, and Roman Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the art and ideas of the classical Greek and Roman cultures, including the Etruscans. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 514 Advanced Studies in Medieval Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of development in the art and ideas of Byzantine, Germanic, Romanesque or Gothic Europe or of Islam. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 519 Advanced Studies in Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the Proto-Renaissance, Early Renaissance, or High Renaissance in Europe or Latin America. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 524 Advanced Studies in Baroque and Eighteenth-Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of England, France, the low countries, Italy, Spain, Latin America, Germany, and Austria during the Baroque period and/or eighteenth century. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 529 Advanced Studies in Nineteenth-Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the nineteenth century including Neoclassicism, Romanticism, Realism, Impressionism in Europe and/or America. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 539 Advanced Studies in Twentieth-Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the twentieth century in Europe and/or America. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 542 Advanced Studies in the Architecture of Richmond. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An advanced, detailed study of a selected aspect of the development of the architecture of the City of Richmond. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 544 Advanced Studies in Art and Architecture of the United States. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the United States. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 549 Advanced Studies in the Art and Architecture of Asia. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of India, China, Korea, Japan,

Southeast Asia, or the Middle East. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 552 Art and Architecture of Central, Eastern, and Southern Africa. Semester course; 3 lecture hours. 3 credits. A study of the major art-producing cultures of Central Africa, including the Cameroon, Gabon, and Zaire; East Africa, including Kenya, Tanzania, and Mozambique; and Southern Africa, Bushman art, prehistoric cave paintings, and rock engravings.

ARH 554 Advanced Studies in African or Oceanic Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of African or Oceanic cultures. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 555 Advanced Studies in Aesthetics and Art Theory. Semester course; 3 lecture hours. 3 credits. An advanced, detailed investigation of aesthetic theories and concepts in art.

ARH 556 Advanced Studies in Ideas and Criticism in Art. Semester course; 3 lecture hours. 3 credits. An advanced, detailed examination of specific concepts in the literature of art criticism with particular emphasis on the principle writings of leading American critics.

ARH 569 Advanced Studies in Museum Methods. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of nine credits. Advanced instruction in the major aspects of museum administration. Lectures by museum personnel and workshops in a variety of museums. A major research project is required.

ARH 571 Advanced Studies in Film Theory. Semester course; 3 lecture hours. 3 credits. Advanced, detailed study of the theories and criticism of film, dealing with medium, form, function, and psychology.

ARH 574 Advanced Studies in Film. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed examination of selected topics in the history of film. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 575 Advanced Studies in the History of Photography. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed examination of selected topics in the history of photography. See *Schedule of Classes* for specific topic to be offered each semester.

ARH 580 Registration Procedures for Museums. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. A study of the standard registration procedures and the current vocabulary employed by the profession. Professional ethics will be stressed to enable the students to become more fully aware of the importance within the museum system.

ARH 581 Museum Exhibitions. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. The study of exhibitions for museums including design, fabrication, lighting, brochures, invitations, and publications.

ARH 582 Educational Program and Public Relations for Museums. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. A study of programming for an art center/museum, including organization of permanent displays, special exhibitions, lectures, docent programs for children and adults, and traveling exhibition services. Special emphasis will be placed on the use of audio-visual materials and techniques in the exhibitions and interpretation programs, as well as the techniques of public information, including press releases, use of television, radio, newspapers, and scholarly publications.

ARH 583 Curatorship and Connoisseurship. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An examination of the curator's relationship and responsibilities to the museum system, research methods, methods of acquisition, organization of museum reference library (including slides and other audio-visual materials), exhibition catalogues, clippings, and file and computer retrieval systems.

ARH 584 Museum Administration. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 464, 465 and/or permission of instructor. A study of museum organization, including staff organization and relationship of director to board, building and grounds, heating and humidity control, guarding and fire control, special installments and shops, membership programs, museum finances for operation and acquisition funds, grants, promotion, development, and overall responsibility to the community and profession.

ARH 590 Art Historiography and Methodology. Semester course; 3 lecture hours. 3 credits. Basic methodology for beginning art history graduate students. An examination of the traditional research methods of the art historical discipline, geared to familiarize students with standards in research and scholarship.

ARH 591 Topics in Advanced Art and Architectural History. Semester course; variable; 1-6 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor. An in-depth study of a particular aspect of the art and architecture of both Old and New World cultures. Course consists exclusively of extended off-campus trips to sites and collections throughout the United States and abroad. See the *Schedule of Classes* for specific topics to be offered each semester.

ARH 593 Advanced Museum Internship. Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor, chair of the graduate committee, and/or chair of the Department of Art History. Advanced fieldwork in a local, regional, or national museum.

Department of Communication Arts and Design

John DeMao

Associate Professor and Chair (1982) BE 1974; MPD 1976 North Carolina State University

John B. Malinoski

Associate Professor and Associate Chair (1988) BA 1982 State University of New York, Fredonia; MFA 1987 Rochester Institute of Technology

Mary McLaughlin

Associate Professor and Assistant Chair (1989) BFA 1972 University of Illinois

Bostic, Alexander (1990) *Associate Professor* AAS 1976 Sillaveria; BFA 1979 Pratt Institute; MS 1994 Syracuse University

Carter, Robert C. (1976) *Professor* BFA University of Utah; MFA 1976 University of Illinois

Chessin, Laura (1997) *Assistant Professor* BFA 1980 Cornell University; MFA 1988 Rhode Island School of Design

Colley, J. David (1995) *Assistant Professor* BA 1963 Murray State University; MA 1964 Columbia University; MFA 1969 University of Illinois, Urbana-Champaign

Day, Benjamin R., II (1982) *Professor* BS Lamar University; MFA 1971 Louisiana Tech University

Domisse, Durwood C. (1974) *Professor* BFA Layton School of Art; MFA 1963 Cranbrook Academy of Art

Earley, Donald T. (1984) *Assistant Professor* ASSO 1985 Fashion Institute of Technology

Foster, Robert L. (1981) *Associate Professor* BFA 1977 Virginia Commonwealth University; MFA 1985 Syracuse University

Franck, Kathleen Ann (1980) *Associate Professor* BFA 1967 University of Illinois; MFA 1985 Syracuse University

Kaputof, Robert M. (1993) *Assistant Professor* AA 1972 Diablo Valley Junior College; BA 1975 Chico State University; MA and MFA 1979 University of California, Berkeley

LaFratta, Mary Anna (1984) *Associate Professor* MFA 1984 Virginia Commonwealth University

McKelvey, Roy D. (1995) *Assistant Professor* BFA 1979 and MS 1985 Carnegie-Mellon University

Meganck, Robert J. (1978) *Professor* BFA The Art School of the Society of the Arts and Crafts; MFA 1975 Cranbrook Academy of Art

Meggs, Philip B. (1968) *Professor* BFA and MFA 1971 Virginia Commonwealth University
 Ouchi, Akira (1982) *Associate Professor* BA Waseda University; MS 1971 Illinois Institute of Technology
 Price, Jeffrey T. (1992) *Assistant Professor* BFA 1990 University of Oklahoma; MFA Virginia Commonwealth University
 Scalin, Charles B. (1968) *Professor* BFA Art Institute of Chicago; MFA 1968 Pratt Institute
 Strube, Nancy L. (1974) *Assistant Professor* BFA 1978 Parsons School of Design
 Turner, Pamela (1997) *Assistant Professor* BFA 1984 and MFA 1988 Virginia Commonwealth University
 Woolman, Matthew (1997) *Assistant Professor* BA 1990 Berlin College; MFA 1996 Virginia Commonwealth University

Emeriti Faculty

Apgar, Nickolas *Professor Emeritus* BFA and MFA Syracuse University
 Bevilaqua, William Otto *Professor Emeritus* BFA Virginia Commonwealth University; MFA University of North Carolina
 Carlyon, Richard N. *Professor Emeritus* BFA and MFA Virginia Commonwealth University
 Hilton, John T. *Professor Emeritus* BFA Yale School of Fine Arts; MS Institute of Design, Illinois Institute of Technology

The Department of Communication Arts and Design, in close cooperation with the Department of Photography, offers intense study of visual communications and design. The program focuses on the development of innovative thinking and creative problem-solving abilities required for professional excellence. The curriculum is oriented toward understanding visual form and structure, professional skills, and social and environmental awareness. The information/communication orientation of contemporary society relies on this discipline to create visual images and concepts, connecting people to their economic, social, cultural, and political lives.

To face the challenges in this era of rapid technological change, the department prepares students for future societal needs by fostering a spirit of experimentation and inquiry, and by integrating computer and electronic media study into the program.

The Department of Communication Arts and Design offers a 131 credit Bachelor of Fine Arts. This degree is offered in two programs, Communication Arts, which focuses on visual imaging, and Communications Design, which focuses on the design of visual communications.

After completing the Foundation Program, separate communication arts and communication design sophomore core programs further develop fundamental art and design skills essential to each program. Upper-level study in communication arts includes courses in digital imaging, illustration, kinetic imagery (film/video/animation), three-dimensional modeling and animation, and photography. Students in the Communication Design Program take courses in art direction, graphic design, typographic design, three-dimensional design (environmental/exhibit/package), and interactive multimedia design (interactive video, internet communication, and Web site design).

Communication Arts Program

Digital Imaging. Courses in digital imaging allow students to explore the creative and communicative aspects of visual image generation made possible through computer technology. Emphasis is placed on

bridging the traditional boundaries between illustration, photography, and kinetic imagery creating an interdisciplinary approach to computer image creation and manipulation.

Illustration. Illustration is the component of visual communication which encourages the use of drawn, painted, or constructed imagery to communicate ideas. Illustration makes use of a wide range of media (both traditional and contemporary). It is often accompanied by text and is created with the intent of being reproduced for public dissemination.

Kinetic Imagery. This concentration explores the creative synthesis of sound and the moving image through the mediums of film, video, and animation. Emphasis is placed upon the artistic and communicative uses of media in contemporary society.

Photography. This concentration focuses upon the technical and creative aspects of photography. It is designed for students who wish to explore photography as a personal language of artistic expression and as a means for creating images for visual communications.

Three-Dimensional Modeling. Three-dimensional modeling courses are designed for students who desire advanced study in the use of the computer as a tool for designing, modeling, and rendering three-dimensional objects in space. Emphasis is placed on electronic animation as a communication discipline and career.

Communication Design Program

Art Direction. Courses in art direction explore the creative synthesis of aesthetic and business objectives for the purposes of effective communication. Emphasis is placed on conceptual development of communication ideas, the development of communication strategy involving the use of media, and the coordination of creative activities.

Graphic Design. Courses in graphic design are concerned with the creation and production of solutions to visual communications problems in a variety of media and environments.

Interactive Multimedia Design. Courses in this area focus on the use of contemporary electronic and computer media to meet communication needs. Emphasis is placed on design, development, authoring, and production of integrated visual/textual/audio solutions.

Typographic Design. Courses in this area explore the use of type and typography as an expressive and functional communicative tool. Emphasis is placed on understanding typographic design criteria that meet the reader's needs, the communicator's intent, and the designer's formal sensibilities.

Three-Dimensional Design. Courses in this area explore the design of three-dimensional solutions to communication problems. Emphasis is on programmatic evaluation and the influence of functional, structural, and contextual criteria on solutions.

Multidisciplinary Program

Students with clearly defined personal goals may develop an individual program of study after their sophomore year. A program plan encompassing study in both

communication arts and communication design is developed in close cooperation with the faculty adviser. To allow for sufficient in-depth study in the two chosen areas, successful completion of an additional 16 credits in upper-level studio courses is required. These courses are divided between the selected areas and must be taken in "emphasis area studios." An additional semester beyond what would normally be taken to fulfill requirements may be needed to complete this option. The individual program proposal requires the approval of the department chair.

Degree Requirements in Communication Arts and Design

	<i>Credits</i>
Studios	
Foundation Program	16
Visual Communications Fundamentals	24
Emphasis Area	33 (CA) or 39 (CD)
General Education Academic Electives	24
Introduction to the Arts	2
Art History and Theory	20
Open Electives	12 (CA) or 6 (CD)

	131

Advancement in this department is based on completion of prerequisite courses. Successful completion of the Art Foundation Program is required as a prerequisite for all 200-level studio courses in the Department of Communication Arts and Design. Because of enrollment pressures, admission is by portfolio review administered only once yearly during the spring semester. Transfer students must also submit a portfolio to the department before acceptance will be granted. Acceptance into and successful completion of the foundation program or transfer equivalent does not guarantee entry into the department. Twenty-four credits of visual communications fundamentals must be completed before entering 300- and 400-level studio courses. Specific prerequisites for professional courses are in the course listings. Nonmajors who have completed the foundation program can take courses in the department with the permission of the assistant chair when space is available.

Equipment, materials, and supplies in this program may cost in excess of \$1,000 per year, depending on the course of study.

Master of Fine Arts/Visual Communications

The Department of Communication Arts and Design prepares graduate students to assume a leadership role in a complex and expanding profession. To this end, the department develops the philosophy and personal direction of each student and focuses their resources on functional and expressive visual communications. Students concentrate on the philosophical, communicative, and aesthetic relationships of visual problem solving and the interacting skills leading to the effective articulation of concepts. The MFA degree requires 60 credit hours.

See the *Graduate Bulletin* for a more detailed description of this program.

Courses in Communication Arts and Design

CDE 191 Studio Topics in Communication Arts and Design. Semester course; 3-9 studio hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Open to nonmajors. Topical studio focusing on visual exploration and the creation of expressive imagery in conjunction with functional communications. See the *Schedule of Classes* for specific topics to be offered.

CDE 201 Introduction to Video. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: Required for Communication Arts Kinetic Imaging emphasis. This course is an elective for communication arts emphasis. A study of the processes and equipment necessary for producing and editing work on videotape.

CDE 206 Anatomy for Illustration. Semester course; 2 lecture and 3 studio hours. 3 credits. An advanced investigation of human structure and motion as applied to illustration. In addition to assigned readings, students will execute a series of anatomical drawings.

CDE 207 Introduction to Computer Techniques. Semester course; 2 lecture and 3 studio hours. 3 credits. Corequisite: CDE 210. An introductory workshop in microprocessor hardware operations, software procedures, and Internet communications necessary for contemporary communication arts and design practice.

CDE 208 Communication Arts Computer Techniques. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 207. Required: communication arts emphasis. An introductory course into the use of the computer and peripheral devices in the creation of raster and vector based images.

CDE 209 Communication Design Computer Techniques. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 207. Corequisite: CDE 212. A workshop in advanced software procedures necessary for contemporary typography and graphic design practice.

CDE 210 Visual Communication Fundamentals. Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: Successful completion of Foundation Program. A course in which basic visual and cognitive organizational processes for the practice of communication arts and design are presented through lectures and demonstrated through studio exercises. The course includes visual perception and organization, visual problem-solving techniques, and visual ideation.

CDE 211 Typography I. Semester course; 2 lecture and 3 studio hours. 3 credits. Corequisite: CDE 212. An introduction to communication problem solving through the visual medium of language. The fundamentals of typography and typographic design are explored in experimental and practical projects.

CDE 212 Graphic Design I: Form and Communication. Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: CDE 210. Corequisite: CDE 211. The relationship of form and communication in graphic design is explored through theoretical and applied projects. The impact of typography and imagery and their syntactic relations upon audience and content is stressed.

CDE 224 Introduction to Illustration. Semester course; 2 lecture and 3 studio hours. 3 credits. An intermediate drawing course with emphasis on drawing methods and illustrative techniques to prepare the student for upper-level study in visual communications.

CDE 228 Type and Image. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: Communication arts/illustration and digital imaging emphasis areas. Intermediate course exploring the use of type and image in visual communications.

CDE 233 Media Arts Survey. Semester course; 2 lecture and 3 studio hours. 3 credits. Required: Communication Arts Program, kinetic imagery emphasis. An introduction to kinetic imagery and the principles of media aesthetics.

CDE 239 Media Presentation. Semester course; 2 lecture and 3 studio hours. 3 credits. (Writing intensive; Oral communication intensive.)

An introduction to the synthesis of word, sound, and moving visual imagery for creating effective media presentations.

CDE 252 Twentieth-Century Visual Communications I. Semester course; 3 lecture hours. 3 credits. An investigation of contemporary visual communication concepts, media, and images and their role in contemporary society.

CDE 253 Twentieth-Century Visual Communications II. Semester course; 3 lecture hours. 3 credits. An historical overview of the development of twentieth-century visual communications as specifically defined by technological advancements and media concerns.

CDE 291 Studio Topics in Communication Arts and Design. Semester course; 3-9 studio hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Open only to majors in the School of the Arts. Studio Topics.

CDE 300 Creative Strategies. Semester course; 2 lecture and 3 studio hours. 3 credits. A course in which alternative creative communication problem solving strategies are investigated.

CDE 301 Print Production. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: CDE 211. A study of the tools and processes used in preparing a design for reproduction.

CDE 302 Graphics Processes and Techniques. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: CDE 211. A workshop in graphics lab equipment and materials as design tools. Emphasis is on image creation and processing.

CDE 303 Two-Dimensional Comping. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: CDE 211. A technical workshop which explores the techniques, materials, and procedures of making composites.

CDE 304 Sound Communication. Semester course; 2 lecture and 3 studio hours. 3 credits. This course is an elective for Communications Arts emphasis. The basic theory and production of media-based sound.

CDE 308 Web Page Design. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 208 or CDE 209 or permission of instructor. A course developing the design of Web sites. Emphasis is placed on the visual design, navigation, development, communication and authoring of Web sites.

CDE 310 Graphic Design II: Publications. Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisites: Communication Design Emphasis and CDE 212. Corequisite: CDE 312. An introduction to the design process and applied realization of print based publications. It considers the form and communication of the printed page from the tradition of print to the organizational principles outside that tradition through lectures, demonstrations, and problem solving.

CDE 311 Graphic Design III: Interactive Design. Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisites: Required for Communication Design majors and CDE 310. Corequisite: CDE 412. An examination of the conceptual and technical issues involved in the design and production of interactive documents. The course addresses the possibilities and limitations of computer generated images, sound, and digital video as they relate to visual communication problem solving.

CDE 312 Typographics II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 211. Corequisite: CDE 310. An intermediate exploration of typography as an expressive and functional communication vehicle. Emphasis is placed on defining effective design criteria to meet the reader's needs and the communicator's intent, and the designer's formal sensibilities.

CDE 321 Illustrative Media and Techniques I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 224. An advanced course exploring various traditional wet media techniques in depicting representational form in illustration.

CDE 322 Illustration Media Techniques II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 321. This course is

an elective for communication arts emphasis. A course exploring various mixed media techniques, including both two- and three-dimensional approaches to illustrative problems.

CDE 323 Figure in Illustration I. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: CDE 206 and CDE 224. Required for illustration emphasis. An introduction to the visual representation of the human form as it applies to illustration.

CDE 324 Figure in Illustration II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 323. An advanced course investigating visually expressive modification of the human form as it applies to illustration.

CDE 325 Color Theory and Practice. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: Required for Illustration emphasis and completion of Art Foundation Program. This course is an elective for communication arts emphasis. An intermediate course in the application of color theory to specific illustrative problems. A number of color theories, both historical and contemporary, will be studied and applied.

CDE 326 Editorial Illustration I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 206. Required for Illustration emphasis. This course is an elective for communication arts emphasis. A required course in black and white line art, developing students' skills in interpreting an author's manuscript. Various line technique will be explored for newspaper and magazine. Oral presentations by the students are required.

CDE 327 Digital Illustration. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: Required for Digital Imaging emphasis, CDE 224, and CDE 208. This course is an elective for Communication Arts emphasis. An intermediate course exploring the use of the computer and peripheral devices in the creation of raster and vector based drawing.

CDE 334 Electronic Animation I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 208 and CDE 239. An introduction to various video and electronic animation techniques.

CDE 336 Video I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 201. Required for communication arts and kinetic imaging emphasis. A comprehensive course in video communication exploring conceptual approaches and form-content relationships. Projects stress theory and application.

CDE 338 Computer Graphics II: 3-D Modeling. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 208. Required for communication arts and kinetic imaging emphasis. An introduction into the use of the computer as a tool for modeling and rendering 3-D objects.

CDE 341 Art Direction I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 212. This course is an elective for communication design emphasis. An introduction to the integrated activities of strategy, conceptual development, and design.

CDE 342 Art Direction II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 341. This course is an elective for communication design emphasis. Concept, layout, and design of a corporate advertising campaign based on the evaluation of research, market analysis, and planning.

CDE 343 Advertising Concepts I. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 212. This course is an elective for communication design emphasis. A course focusing on creative thinking and the development of concepts and ideas in problems of art direction.

CDE 344 Broadcast Art Direction. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 341. This course is an elective for communication design emphasis. A course concentrating on both the concept and planning aspects of broadcast mediums.

CDE 351 Origins of Visual Communications. Semester course; 3 lecture hours. 3 credits. A history of visual communications and design from prehistoric times to the twentieth century.

CDE 352 Print Mediums. Semester course;3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An overview of print production processes and techniques including electronic make-up, printing processes and production control and their relative merits as delivery mechanisms.

CDE 353 Electronic Mediums. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An overview of electronic production processes and techniques. video and audio pre-production, production, editing and postproduction, estimating, and production control.

CDE 354 Theoretical and Philosophical Aspects of Contemporary Communication Arts and Design. Semester course; 3 lecture hours. 3 credits. A study of current theoretical and philosophical issues having an impact on the understanding of communication arts and design.

CDE 355 Design Methods in Visual Communication. Semester course;3 lecture hours. 3 credits. An in-depth investigation of the theoretical aspects of the design process within the context of designing effective visual communications.

CDE 356 Studio Management. Semester course; 3 lecture hours. 3 credits. A study of business and management factors that relate to creative design. Topics include marketing, structure and organization, financial factors, ethical and legal aspects, and management of design, illustration, photography studios.

CDE 357 Critical Issues in Media. Semester course;3 lecture hours. 3 credits. Prerequisite: Required for Communication Arts and Kinetic Imaging emphasis. Topics, theory, and genre affecting media and time based mediums are explored through critical discourse, readings, screenings, and lectures.

CDE 391 Topics in Design. Semester course;variable;1-3 credits per semester. May be repeated for a maximum of nine credits. Topical lectures in design issues and visual communications.

CDE 392 Research/Individual Study. Semester course; 1-2 lecture and 3-6 studio hours. 2-4 credits. The structuring, research,execution, and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem seeker and solver with the ability to carry out self-stated goals. May be repeated for credit.

CDE 401 Electronic Prepress. Semester course;2 lecture and 3 studio hours. 3 credits. A study of electronic tools, processes, and techniques, their integration with traditional production methods, and their use in preparing design work for production.

CDE 403 Senior Studio. Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: Required for Communication Arts emphasis. To be taken in the last semester of the student's senior year. Critical analysis and development of the student's exit portfolio with emphasis on refining and strengthening focus of the visual style and concept inherent in the body of work.

CDE 407 Senior Portfolio. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: Senior status, advertising art direction emphasis. A course oriented toward the creation of a professional corporate advertising portfolio and resume.

CDE 408 Multimedia Communication Systems. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: CDE 207 or CDE 309 or permission of instructor. Corequisite: CDE 437. A technical workshop that explores hardware, software, and interconnectivity as it relates to the creation of complex multimedia communication/information delivery systems.

CDE 409 Video Editing. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 336. This course is a studio elective for Communication Arts. An advanced study focusing on the operational skills necessary for working with advanced video postproduction equipment.

CDE 412 Typography III. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites:CDE 310 and 312.Advanced problems in

typographic design with emphasis upon the development of a personal creative approach to form and communication.

CDE 413 Package Design. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites:CDE 311 and 312.A workshop in three-dimensional structures and two-dimensional graphics applied to problems of package design.

CDE 414 Exhibition and Environmental Graphic Design. Semester course;3 lecture and 3 studio hours. 4 credits. Prerequisites: CDE 411 and 412. Study of the presentation of information in large-scale, three-dimensional formats. Exploration of exhibition and environmental design, including developing imagery and typography, understanding the use of "wayfinding" and human factors, communicating of programmed content.

CDE 415 Systems in Design. Semester course;3 lecture and 3 studio hours. 4 credits. Prerequisites: CDE 311 and 312. An investigation of the application of systems to various aspects of the design process in the field of visual communications.

CDE 416 Motivational Graphics. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 310 and 312. Study in the development of visual communication performance criteria and practical strategies that influence audience attitudes and behavior.

CDE 417 Interdisciplinary Team Design. Semester course;2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 310 and 312. Advanced projects in visual communication in which student design teams solve complex problems requiring collaboration.

CDE 419 Electronic Imaging. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites:CDE 311, CDE 321,or CDE 338.An advanced exploration into the use of the computer and other electronic peripheral devices in the creation of expressive imagery and functional communications.

CDE 420 Book Illustration. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites:CDE 322 and CDE 324.This course is an elective for communication arts emphasis. An advanced course exploring illustration for the book publishing market.

CDE 421 Illustration for Business Communications. Semester course;2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 322 and 323.Required for Illustration emphasis. An advanced course developing illustrations appropriate for business communications.

CDE 422 Design Center:Internet Media. Semester course;2 lecture and 3 studio hours. 3 credits. Course may be repeated for a total of six credits. Prerequisites: CDE 308, 311, and 412 and portfolio review by faculty. A professional studio to give students practical experience working under faculty guidance on design projects for university clients and nonprofit community organizations.

CDE 423 Editorial Illustration. Semester course;3 lecture and 3 studio hours. 4 credits. Prerequisites: CDE 321 and 311. An advanced course developing the student's skill at interpreting an author's manuscript.The major emphasis is given to illustrations appearing in books and magazines.

CDE 424 Visual Journalism in Illustration. Semester course;2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 321 and 323. Required for Illustration emphasis. Studio elective for communication arts emphasis. An advanced course developing the student's skill in commenting upon contemporary issues and themes independently of existing manuscripts. This is a team taught course with teaching responsibilities shared by faculty with expertise in illustration and faculty with expertise in journalism.

CDE 425 Experimental Illustration. Semester course;3 lecture and 3 studio hours. 4 credits. Prerequisite: CDE 321. An advanced course encouraging the student to discover unusual techniques and to develop innovative solutions. The course stresses experimentation with novel media and surfaces.

CDE 426 Editorial Illustration II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 326. This course is an elective for communication arts emphasis. An advanced course developing students' skills in interpreting an author's manuscript. The major emphasis is given to color illustrations appearing in magazines and newspapers.

CDE 427 Imagery for Children. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 322 and CDE 324. Elective for communication arts emphasis. An advanced course developing both fiction and nonfiction illustrations intended for the preschool and elementary school children's publishing market.

CDE 434 Electronic Animation II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 334. Studio elective for communication arts. Students will work with advanced techniques and have the opportunity to design and produce their own projects.

CDE 436 Video II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CDE 233 or CDE 309. Required for communication arts and kinetic imaging emphasis. A comprehensive course in video communication exploring narrative strategies and form-content relationships.

CDE 438 Computer Graphics III:3-D Animation. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 338. Advance study of computer modeling and the introduction of 3-D animation.

CDE 439 Video III. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 436. This course is an elective. An advanced course focusing on short subject pieces in video. Fictional and experimental narrative works will be investigated.

CDE 441 Art Direction III. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 342. An advanced exploration of art direction based on positioning of the corporation that carries over several different channels of communication.

CDE 442 Art Direction IV. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 342. An advanced course in art direction including the development of integrated business advertising plans.

CDE 443 Advertising Concepts II. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 343. An advanced course in art direction focusing on the successful integration of strategy and creativity.

CDE 444 Art Direction for Nonprofit Organizations. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CDE 342. Advanced concept, layout, and design under the delimitations of precise environmental or social agendas and limited budgets.

CDE 451 Management Aspects of Art Direction. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An in-depth analysis of agency management, operations, and the function of art direction.

CDE 491 Studio Topics in Communication Arts and Design. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: Completion of junior-level study and permission of instructor. Topical studio focusing on research and experimentation in specialized visual communication media. May be repeated for a maximum of 8 credits.

CDE 492 Communication Arts and Design Internship. Semester course; 2-4 credits. Prerequisites: Completion of junior year and 3.0 GPA in major. Permission of intern coordinator and chair required. May be repeated to a maximum of 4 credits. CDE majors only. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

CDE 519 Virtual Reality. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: Permission of instructor required. An exploration into the creation of fully immersive, interactive, virtual environments and their use as communication and artistic mediums.

CDE 537 Integrated Electronic Information/Communication Systems. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: Permission of instructor required. A course concentrating

on the design, development, authoring, production, and publication of electronic information/communication programs. Emphasis is placed on the creative integration of expressive form, communicative function, and effective application of advanced visualization technology.

CDE 567 Visual Interface Design. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: Permission of instructor. A course concentrating on the visual design and development of human-computer interface systems. Emphasis is placed on Visual Design Processes and methods in the diverse arena of user interface design.

Department of Crafts

Nancy K. Thompson

Professor and Chair (1969) BS Ball State Teacher's College; MFA 1968 Indiana University

Hammersley, William S. (1976) *Associate Professor* BS and MFA 1976 University of Wisconsin

Hawthorne, John D. (1976) *Associate Professor* BA Colorado State University; MFA 1976 Cranbrook Academy of Art

Ipsen, Kent F. (1973) *Professor* BS, MS and MFA 1965 University of Wisconsin

Iverson, Susan L. (1975) *Professor* BFA Colorado State University; MFA 1975 Tyler School of Art

Meyer, C. James (1973) *Professor* BA State University of New York, Albany; MFA 1973 State University of New York, New Paltz

Rosenbaum, Allan (1986) *Associate Professor* BS 1978 University of Wisconsin, Madison; MFA 1986 Virginia Commonwealth University

Emeriti Faculty

Eastman, Allan A. *Professor Emeritus* BS University of New York, Buffalo; Diploma Pratt Institute; Diploma Vesper George School of Art

The Department of Crafts offers a professionally oriented program that leads to a BFA degree in ceramics, fiberwork/fabric design, glassworking, metalsmithing/jewelry, woodworking/furniture design. Within these areas of specialization, courses are designed to assist students in developing concepts, personal directions, and the necessary skills and technical competencies, enabling them to pursue a professional career or graduate study. In addition to the major area of study, students have the opportunity for a diverse education in the liberal arts and humanities. Students are encouraged to select courses in other schools on the Academic Campus that will add to their general knowledge. A student may elect a minor area of study in any department or program offering a minor. The minor can be used to fulfill career objectives or to investigate a discipline of secondary interest.

Career opportunities for crafts majors include setting up an independent studio or gallery, restoration or repair work, teaching or participating in the Artist-in-Residence programs in the public schools, and consulting and designing for industry. Courses in the department are open to all students at the University but must be taken in sequence starting at the 200-level.

Degree Requirements in Crafts

The Bachelor of Fine Arts in Crafts requires a minimum of 130 credits, including 51 in the major. A minimum of 45 of the 130 credits must be 300-400-level courses. To enroll in an advanced-level craft (CRA) course, majors must have earned a "C" grade or better in all (CRA) courses prerequisite for that course.

	<i>Credits</i>
Studios	
Foundation Program	16
Basic Crafts	16
Orientation to Crafts	1
Advanced Crafts	32
Painting/Printmaking or Sculpture Studio	8
General Studies	
Introduction to the Arts	2
English 101,200	6
Literature	6
Art History and Theory	14
Approved Electives to include three credits in social sciences, three credits in mathematics, and four credits in laboratory science	18
Senior Seminar	2
Open Electives	9
	130

Minor in Crafts

Successful completion of the Art Foundation Program is a prerequisite for the minor concentration which consists of a minimum of 18 credits in crafts courses. Of these 18, a minimum of nine credits must be in upper-level courses.

Courses in Crafts

CRA 201-202 Metalsmithing. Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Investigation of metal forming processes such as forging, raising, and construction. Research in contemporary and historical metal forms.

CRA 211-212 Jewelry. Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Investigation of jewelry making processes such as construction, repousse/chasing, surface embellishment, stone setting, and casting. Research in contemporary and historical jewelry forms.

CRA 221 Woodworking Techniques. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits with permission of department chair. Introduction to techniques of woodworking. Includes the use of hand tools; hand and machine joinery; shaping and carving; finishing; and techniques involving jigs and fixtures. Students participate in studio work.

CRA 241 Ceramics: Handbuilding. Semester course; 2 lecture and 6 studio hours. 4 credits. Basic construction techniques for fabricating ceramic objects. Includes mold-making, slip casting, and press-molding as well as the use and application of low-fire slips, underglazes, glazes, and the firing of these objects in kilns.

CRA 242 Ceramics: Wheelthrowing. Semester course; 2 lecture and 6 studio hours. 4 credits. Introduction to the use of the potter's wheel. The objective is to develop the skill, dexterity, and coordination required to use the wheel as one tool of the ceramic forming process. Includes the properties and uses of high-fire clays and glazes. Students participate in kiln firings.

CRA 251, 252 Introduction to Glassworking. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An investigation of techniques, tools, equipment, materials involved in hot and cold glassworking processes. First semester covers basic molten-glass furnace techniques such as blowing and casting, mold-making, and Pate de Verre (fusing crushed glass in a mold). Second semester explores colored glass fusing, use of enamels and glazes, mold-making for slumped forms, and stained glass.

CRA 261, 262 Beginning Textiles. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. In the first semester, techniques of tapestry, weaving, spinning, chemical dyeing, feltmaking, and basketry are covered. Second semester focuses on *appliqué*, papermaking, trapunto, embroidery, fabric collage, and piecing and quilting. Materials, tools,

history, and modern application of each technique will be examined through lectures, demonstrations, and studio work.

CRA 282 Orientation to Crafts. Semester course; 1 lecture hour. 1 credit. Discussion of a variety of approaches to study within the craft media, stressing elements of creative activity which are basic to any involvement in making visually-oriented objects.

CRA 301, 302/401, 402 Advanced Metalsmithing or Jewelry. Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Prerequisite: CRA 201-202 or 211-212. This course offers opportunity for specialization and development of techniques.

CRA 320 Furniture Design. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 8 credits. Prerequisite: CRA 221. The course explores the development of ideas through drawings, mock-ups and the planning and execution of a small furniture object utilizing basic and specialized woodworking techniques.

CRA 321, 322/421, 422 Advanced Woodworking and Furniture Design. Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Prerequisite: CRA 221 and 320. Advanced design and construction investigation of varied materials, and machine processes.

CRA 341, 342/441, 442 Advanced Ceramics. Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Prerequisites: CRA 241 and 242. Advanced problems in the design and production of functional and nonfunctional ceramic products.

CRA 351, 352/451, 452 Glassworking. Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Prerequisite: CRA 251 and 252. Opportunity for further investigation and specialization in glassworking design and technical mastery.

CRA 361, 362/461, 462 Advanced Textiles. Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. Prerequisites: CRA 261 and 262 or permission of instructor. Emphasis on development and concentrated studio work in contemporary and traditional loom techniques along with continuing individual pursuit of the other textile techniques.

CRA 363-364 Fabric Design. Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Exploration of pattern as a design concept and the development of technical skills for silk screening on fabric.

CRA 367, 368 Tapestry. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Origins of tapestry forms and execution of techniques.

CRA 369 Ancient Peruvian Textile Techniques. Semester course; 2 lecture and 6 or 12 studio hours. 4 credits. An examination of textile techniques perfected in ancient Peru and their application to contemporary fiber work. Pre-Columbian cultures will be studied to understand textile development. Course includes student duplication of techniques to better understand "structure" and the production of a personal object(s) utilizing these techniques and information.

CRA 409 Summer Metal and Jewelry Workshop. Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific metal processes and techniques, such as fabrication, forging, forming, casting, enameling, and electroforming. See the *Schedule of Classes* for specific course offerings.

CRA 429 Summer Woodworking Workshop. Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific woodworking processes and techniques, such as joinery methods, laminate bending, steambending, etc. See the *Schedule of Classes* for specific course offerings.

CRA 445 Technological Developments in Ceramics. Semester course; 3 lecture hours. 3 credits. An examination of significant developments in the design and technology of ceramics from the prehistoric period to the present. The historical outline will include ceramics of Europe, the Orient, and the Americas. Illustrated lectures.

CRA 446 Glaze Technology. Semester course;3 lecture hours. 3 credits. Development, formulation, and application of ceramic glazes. The technology includes high,medium,and low firing ranges as well as color and analysis of glaze materials.

CRA 447 Ceramic Technology: Clay, Claybodies, and Slips. Semester course; 3 lecture hours. 3 credits. Study of clay from geological origins to practical application. Course includes development and application of clay bodies in different firing ranges, englobes, and slips.

CRA 448,449/548, 549 Ceramic Workshop. Semester courses;9 studio hours. 3, 3 credits. Exploration in specific ceramic techniques such as raku,salt glaze, primitive firing, low temperature glazing.

CRA 455, 456 Survey of Glass. Semester courses; 3 lecture hours. 3, 3 credits. An examination of significant technological developments in glass from the past to present. First semester:ancient to sixteenth century. Second semester: seventeenth century to contemporary. Illustrated lectures.

CRA 459 Summer Glassworking Workshop. Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific glassworking processes, such as forming molten glass, casting, and cold-working techniques. See the *Schedule of Classes* for specific course offerings.

CRA 463, 464 Fabric Design. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Development of a personal direction and examination of direct color application techniques such as batik, airbrush, and fabric painting.

CRA 469 Summer Textile Workshop. Semester course;3,6,9 studio hours. Variable;1,2,3 credits. May be repeated for credit.Prerequisite: Permission of instructor. Exploration of specific textile techniques and processes, such as multiharness weaving, pulled warp, special dye processes, and designing for printed fabrics. See the *Schedule of Classes* for specific course offerings.

CRA 482 Senior Seminar. Semester course;2 lecture hours. 2 credits. Writing intensive. Résumé and portfolio preparation, promotion of creative work and selling, exhibition opportunities and process, career options, setting up a studio, and other subjects appropriate to the artist/craftsperson.

CRA 491 Topics in Crafts. Semester course; 1-3 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of crafts. See the *Schedule of Classes* for specific topic(s) to be offered each semester.

CRA 493,494 Fieldwork. Semester courses;6,6 credits. Prerequisite: Senior standing in the major and permission of chair. Opportunity for practical work experiences. Senior students are placed in professional organizations that offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 270 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

Department of Dance and Choreography

Martha Curtis

Associate Professor and Acting Chair (1988) BFA 1976 North Carolina School of the Arts

Burnside, Chris (1985) *Associate Professor* BFA 1969 Virginia Commonwealth University;MM 1973 Florida State University

Jung, Audrey M.H.(1986) *Professor* BA 1972 University of Hawaii;MA 1974 University of Illinois, Urbana-Champaign; CMA 1979 Laban Institute

Richards, Melanie J. (1982) *Associate Professor* BA and MA 1975 University of California,Los Angeles

Steel, Judith (1989) *Assistant Professor* BS 1972 Slippery Rock State College;MA 1975 University of Colorado

Emerita Faculty

Wessells, Frances D. *Associate Professor Emerita* BA University of Denver;MA New York University

The Mission of the Department of Dance and Choreography is to create an environment where the student experiences the demands and challenges of the professional dancer/choreographer. In a community setting where communication, mutual respect and self-motivation are encouraged, classes provide the student with disciplined training that will maximize their potential to become dancers of technical excellence, choreographers with original and powerful voices and thinkers with high academic standards.

Students are trained to be performers, choreographers, and teachers in this curriculum which emphasizes modern dance and offers dance courses in modern, improvisation, composition, choreography, music for dancers, and dance history, as well as ballet, jazz, tap, folk, African-Caribbean, ballroom, contact improvisation, T'ai Chi, kinesiology, video/choreography, lighting design, and dancer as teacher. Additionally, the program provides a variety of experiences in performance, choreography, and production. These offerings enable students to develop as sensitive, expressive artists with professional training in dance technique, a knowledge of dance philosophies, and a foundation in history, enabling them to function as independent and creative artists in the field of dance.

Degree Requirements in Dance and Choreography

	<i>Credits</i>
Dance Technique	
Modern	24 or 28*
Ballet	12 or 16*
Tap	2
Ballroom and Folk,African-Caribbean,T'ai Chi or Jazz	2
Dance Workshop	8
Improvisation	4
Dance Composition	6
Repertory	3
Music for Dancers	3
Music Appreciation	3
Dancer as Teacher	3
Dance Production Workshop	2
Elective in Theatre	3
Choreography Performance	6
Senior Project	3
Dance History and Theory	
DAN 107 Contemporary Dance Perspectives	2
DAN 308 Dance History	3
DAN 313 Dance in Non-Western Culture	3
Approved Dance Electives	2 or 3
Contact Improvisation OR	
Video Choreography Workshop	
General Studies**	
English 101-200	6
Kinesiology	3
Art History 103 OR 104	3
Social/Behavioral Sciences Elective	3
Math Elective	3
Ethics Elective	3
Open Electives	14 or 15

134

* Total for modern and ballet must be 40.

** Students must include one writing intensive course (WI) as part of their general education electives.

The BFA degree program in dance/choreography requires 134 credits, with 88 of those credits as the core curriculum. Dance majors are encouraged to take two technique classes daily, including the required modern technique class. The continuous study of ballet is a strong component of the curriculum, and dance majors are required to take 12-16 credits in ballet. Beyond the first level of technique, students progress to the higher levels through audition or with permission of the instructor. Within the core are opportunities for independent study, including a possible semester spent in an intensive investigation of a dance-related subject in the field.

The VCU Dance Program provides opportunities for students to interact with faculty and guest artist mentors in classes, advising sessions, concerts and in creative projects. Formal evaluation procedures include a career evaluation during the second semester of the freshman year and a sophomore re-admittance audition at the end of the sophomore year. The purpose of these evaluations is to assess each student's progress in relationship to the standards of the program.

Before graduation, students must complete a Senior Project which is a practical presentation in both performance and choreography. Senior projects are approved by the chair in consultation with the full-time faculty. Approval is based on the quality of a proposal written by the student and an assessment of the student's overall academic record.

Within the School of the Arts, dance students have frequent opportunities to work collaboratively with other students in the arts. Possibilities include the visual arts, participation in multimedia events, and productions outside the dance department.

Any dance major can perform in numerous formal concerts, informal showings, and lecture-demonstrations produced by the department.

Opportunities are also available for training in teaching, but students interested in earning state certification should consult their advisers.

An audition is required for acceptance into the dance program. Applicants for the BFA in dance/choreography will follow the admissions guidelines for arts students as described in the earlier portion of this section of the *Bulletin*.

Minor in Dance

Any VCU student can declare a minor in dance. The minor consists of 27 credits. Fourteen of those credits must be taken in approved dance technique – a combination of modern, ballet, tap, Tai Chi, contact improvisation, and African Caribbean. Dance minors must also take DAN 105-106 Improvisation, DAN 205 Composition, DAN 206 Composition or DAN 319-320 Video/Choreography, and DAN 307 or 308 Dance History.

Courses in Dance and Choreography

DAN 101-102 Modern Dance Technique I. Continuous course;1 lecture and 2 studio hours. 2-2 credits. Prerequisite: Dance major or permission of chair. Corequisite: DAN L101-L102. Beginning study and

training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness.

DAN L101-L102 Modern Dance Technique I Laboratory. Continuous course;3 studio hours. 1-1 credit.An extension of DAN 101-102.Required of dance majors, concurrent with DAN 101-102.

DAN 105-106 Improvisation. Continuous course;1 lecture and 2 studio hours. 2-2 credits. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention, and movement creativity.

DAN 107 Contemporary Dance Perspectives. Semester course; 2 lecture hours. 2 credits. Prerequisite: Dance major or permission of chair. This is the first in a sequence of dance courses that fulfills one of the General Education Writing Intensive requirements for dance majors. An introduction and orientation to various aspects of contemporary dance as an art form. Students will engage in the viewing and discussion of film,videos and dance concerts.

DAN 109, 110/209, 210/309, 310/409, 410 Dance Workshop. Semester courses;2 studio hours. 1 credit.Prerequisite:Dance major or permission of instructor. Group exploration of techniques related to all areas of dance.

DAN 111-112 Ballet Technique I. Continuous course;1 lecture and 2 studio hours. 2-2 credits. Beginning study of the principles of ballet technique. Emphasis upon vocabulary terms, body alignment, spatial patterning, flexibility, strength,and kinesthetic awareness to move the body in the ballet style.

DAN 113 Ballet Technique I. Semester course;1 lecture and 2 studio hours. 2 credits. Prerequisite:DAN 111-112 or permission of instructor. A continuation of study of ballet technique at the beginning-level. Emphasis upon a stronger, more exact performance of the basic ballet steps, focusing on correct alignment, development of the body, and rhythmic and kinesthetic awareness. This course may be repeated for a maximum of 4 credits on the recommendation of the chair.

DAN 114, 214, 314, 414 Summer Dance Workshops. Semester courses; variable;1, 3 credits per semester. May be repeated for credit. Flexible course offerings in dance technique, improvisation, composition, rhythmic training, and repertory. See the *Schedule of Classes* for specific course offerings.

DAN 121, 122/AAS 121, 122 Tap Technique I. Semester courses; 1 lecture and 2 studio hours. 2,2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness to move the body in the style required for tap dancing.

DAN 126, 127/AAS 126, 127 African-Caribbean Dance I. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean.

DAN 131 Folk Dance. Semester course; 2 studio hours. 1 credit. A study of folk dances indigenous to European and early American culture, including the learning and performing of the steps accompanied by their traditional music and a discussion of the culture from which they sprang. Also stressed is the knowledge of how to transcribe written versions of these dances and how to set them to their appropriate music.

DAN 141, 142 Ballroom Dancing. Semester courses;2 studio hours. 1, 1 credit.A study of basic ballroom dance steps and practice in their performance.

DAN 151, 152/AAS 151, 152 Jazz Dance Technique I. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: DAN 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment,flexibility, balance, rhythmic awareness, and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance.

DAN 161, 162/261,262/361,362/461, 462 Rehearsal and Performance. Semester courses; hours to be arranged. 1 to 3 credits. Open to nonmajors by permission of instructor. Dance rehearsals and production work for a major dance concert. Each student is expected to devote a minimum of 50 hours per credit per semester to receive credit.

DAN 171,172 T'ai Chi. Semester courses;1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi,a Chinese exercise form,which is designed to bring one to full potential through balancing, aligning, and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

DAN 181-182 Movement for Actors I. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite:Theatre major or permission of instructor. Basic movement training for the actor with emphasis on developing body awareness, movement range and physical, expressive clarity.

DAN 183, 184 Introduction to Modern Dance Technique. Semester courses;1 lecture and 2 studio hours. 2,2 credits. Experiential introduction to basic movement principles, body alignment and the elements of modern dance. For non-dance majors.

DAN 201-202 Modern Dance Technique II. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 102 or permission of instructor. Corequisite:DAN L201,L202.Further study and training in the principles of modern dance technique on a low intermediate-level with the expectation of better coordination of all elements into a sense of dance. This course may be repeated for a maximum of 8 credits on the recommendation of the chair.

DAN L201-L202 Modern Dance Technique II Laboratory. Continuous course; 3 studio hours. 1-1 credit. Prerequisite: DAN 102 and DAN L102 or permission of instructor. Corequisite: DAN 201-202. An extension of DAN 201-202.This course may be repeated for a maximum of 4 credits on the recommendation of the chair.

DAN 205-206 Composition. Continuous course;2 lecture and 2 studio hours. 3-3 credits. Prerequisite:DAN 105-106.Improvisation and Music Appreciation MHT 243, or permission of instructor. An introduction to the basic elements of choreography.

DAN 211-212 Ballet Technique II. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 112 or permission of instructor. Further training and practice in ballet technique. Emphasis upon a stronger, more exact performance of the ballet steps, focusing still on correct alignment, development of the body, and kinesthetic awareness. This course may be repeated for a maximum of 8 credits on the recommendation of the chair.

DAN 221, 222 Tap Technique II. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

DAN 226/AAS 226 African-Caribbean II. Semester course;1 lecture and 2 studio hours. 2 credits. Prerequisite: DAN 126, 127, audition, or permission of instructor. Further training and study in dances based on the movements and rhythms of Africa and the Caribbean.

DAN 232 Music for Dancers. Semester course; 3 lecture hours. 3 credits. Prerequisites:MHT 243 and DAN 101 or permission of instructor. An examination of the various traditional and nontraditional concepts which the dancer uses in collaboration with music. Course includes lecture, reading, listening, and movement assignments. Focus will be on the dancer's intelligent and justifiable choice of music through movement analysis.

DAN 243 Dynamic Alignment. Semester course;1 lecture and 2 studio hours. 2 credits. Study of the basic principles of mechanical balance and postural alignment. Practice in the application of the major theories of alignment and techniques of realignment. Corrective exercises, breathing techniques, relaxation, guided imagery, self-awareness exercises, and Body Image work will be learned and practiced.

DAN 251, 252 Jazz Technique II. Semester courses; 1 lecture and 2 studio hours. 2,2 credits. Prerequisites:DAN 151,152 or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

DAN 260 Dance Production Workshop. Semester course; 2 lecture hours. 2 credits. Prerequisite: Dance major or permission of instructor. An introduction to the basic principles of dance lighting and technical theatre through lecture, practical demonstration and discussion.

DAN 271, 272 T'ai Chi II. Semester courses; 1 lecture and 2 studio hours. 2 credits. Prerequisite:DAN 171 or 172,or permission of instructor. Extended training and in-depth application of T'ai Chi with special attention to development of improvisational form by each individual student.

DAN 281-282 Movement for Actors II. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 181-182. Further movement study and training for the actor with emphasis on body awareness, movement range, skill and style, and physical, expressive clarity.

DAN 291 Topics in Dance. Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the *Schedule of Classes* for specific topic(s) to be offered each semester.

DAN 301-302 Modern Dance Technique III. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 202 or permission of instructor. Corequisite: DAN L301 L302. High intermediate study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination,kinesthetic awareness, and aesthetic sensitivity. This course may be repeated for a maximum of eight credits on the recommendation of the chair.

DAN L301-L302 Modern Dance Technique III Laboratory. Continuous course; 3 studio hours. 1-1 credit. Prerequisite: DAN 202 and DAN L202 or permission of the instructor. Corequisite: DAN 301-302. An extension of DAN 301-302.This course may be repeated for a maximum of 4 credits on the recommendation of the chair.

DAN 303-304 Choreography/Performance. Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisite: Composition DAN 205-206 and Music for Dancers DAN 232, or permission of instructor. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

DAN 308 Dance History. Semester course; 3 lecture hours. 3-3 credits. Prerequisite for Dance majors:DAN 107 or permission of instructor. This is the second in a sequence of dance courses that fulfills one of the General Education writing intensive requirements for dance majors. A study and analysis of the history of western theatrical dance forms including motivations, philosophies, and styles from ancient Greece through specific contemporary dance artists of the twentieth century. This course will include lectures, readings and research. Students will engage in the viewing and discussion of film,videos, and dance concerts.

DAN 311-312 Ballet Technique III. Continuous course;1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 212 or permission of instructor. Continued development in the skills and aesthetics of ballet. This course may be repeated for a maximum of 12 credits on the recommendation of the chair.

DAN 313 Dance in World Cultures. Semester course;2 lecture and 2 studio hours. 3 credits. Prerequisite for dance majors:DAN 107 and 308 or permission of instructor. This course is the third in a sequence of dance courses that fulfills one of the General Education writing intensive requirements for dance majors. Students learn and participate in dance styles of various world cultures as they study cultural traditions and how they are expressed in movement. No dance experience necessary. This course will include lectures, readings, research and discussion.Students will engage in the viewing and discussion of films, videos and dance concerts.

DAN 315, 316 Contact Improvisation. Semester courses; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DAN 101,102 or permission of instructor. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

DAN 319,320 Video/Choreography Workshop. Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisite: Experience in movement, performance, and/or video/film, or permission of instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography.

DAN 343 Body Imagery. Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The study of body/mind imagery as a source of exploration that includes movement qualities, dynamics, and vocabularies. Students gain insight into their inner resources as a base for outer expression.

DAN 371, 372 Repertory. Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisites: DAN 101-102 and permission of instructor. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

DAN 401-402 Modern Dance Technique IV. Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DAN 302 or permission of instructor. Corequisite: DAN L401 L402. Advanced study and training in modern dance technique. This course may be repeated for a maximum of 12 credits on the recommendation of the department chair.

DAN L401-L402 Modern Dance Technique IV Laboratory. Continuous course; 3 studio hours. 1-1 credit. Prerequisite: DAN 302 and L302 or permission of the instructor. Corequisite: DAN 401-402. An extension of DAN 401-402. This course may be repeated for a maximum of 4 credits on the recommendation of the department chair.

DAN 407 The Dancer as Teacher. Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The student learns to analyze and communicate movement in a variety of teaching situations. The student will have an opportunity to observe different teaching techniques and to practically apply learned teaching concepts and theories.

DAN 450 Professional Project. Semester course; 3-9 credits. May be repeated for a maximum of twelve credits. An individualized program in research and/or practicum within a professionally-oriented organization, subject to approval of the department faculty.

DAN 451 Careers in Dance. Semester course; 3 lecture hours. 3 credits. Realistic aspects of the dance profession, as performer, teacher, and researcher. The student's learning experience culminates in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

DAN 490 Senior Project. Semester course; 3 lecture hours. 3 credits. Prerequisite: DAN 303-304 and approval of the chair. The culmination of the student's learning experience in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

DAN 491 Topics in Dance. Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the *Schedule of Classes* for specific topic(s) to be offered each semester.

Department of Fashion Design and Merchandising

Christina O. Lindholm

Associate Professor and Chair (1995) BS and MS 1980 University of Missouri

Nancy M. Scott

Assistant Professor and Assistant Chair (1992) BFA 1991 and MEd 1996 Virginia Commonwealth University

Caskey, Kristin A. (1997) *Assistant Professor* BSS Cornell College; BFA Parsons School of Design; MFA 1994 Printmaking Cranbrook Academy of Art

Guthrie, Karen M. (1984) *Associate Professor* of Fashion; BS and MEd Virginia Commonwealth University

McCoy, Howard E., Sr. (1985) *Instructor* BS 1975 and MEd 1980 Virginia Commonwealth University

Swartz, Henry C. (1987) *Associate Professor* BFA 1971 Pratt Institute; MFA 1977 Virginia Commonwealth University

Valerie, Julie B. (1997) *Instructor* BFA 1992 Virginia Commonwealth University

Watson, Janice M. (1982) *Associate Professor* BFA 1973 Moore College of Art; MA 1988 Virginia Commonwealth University

Wilkins, Sandra B. (1978) *Associate Professor* BFA 1972 Virginia Commonwealth University

Emeriti Faculty

Windmueller, Otti Y. *Professor Emeritus* Journeyman Costume Designer, Trained in Germany; BFA Virginia Commonwealth University; Diploma Munich

The Department of Fashion Design and Merchandising offers three tracks: fashion design, leading to a BFA degree; fashion merchandising, leading to a BA degree; and home fashions merchandising, leading to a BA degree.

The fashion design curriculum offers technical courses which provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. Expenses for fabrics and equipment average from \$200 to \$600 a year.

The major in fashion merchandising represents a strong background from marketing, business and specialized professional courses with an emphasis on globalism. Students are directed toward assignments that will develop their skills in research, writing, presentation, and critical thinking. Graduates find career opportunities in fashion forecasting, product development, advertising and promotion, retail management, buying, and international marketing.

Home fashions is a new track which focuses on furnishings, accessories, and textiles specific to the home furnishings industry. The home furnishings industry is one of the fastest growing areas of the fashion market. Objectives for students in the track are to gain product knowledge, understand consumer behavior and develop marketing strategies for successful employment with retail organizations and major manufacturers.

The tracks are extremely time consuming. Students are expected to put class attendance and study time above other campus activities or employment.

Students must take classes in the sequence prescribed by the department and adhere to all prerequisites. Failure to comply can lengthen the number of semesters necessary for completion of degree requirements.

Internships provide not only experience but industry contacts and are strongly recommended. They may be conducted during the fall, spring, or summer semesters.

Degree Requirements in Fashion Design

	<i>Credits</i>		
Foundation Program		Advanced Store Development	
Studios	16	Fashion Seminar	
Professional Courses		Art History	
Computer Construction Methods, Design, Draping, Patternmaking, Drawing, Tailoring, Textiles	70	General Education	42
General Studies		Business Courses	24
English, Art History, Literature, Intro to the Arts, Fashion History, Fashion Seminar	22	Approved Electives	8
Approved Electives to include three credits in social/behavioral sciences and three credits in natural sciences/mathematics	18		126
	126		

Degree Requirements in Fashion Merchandising

	<i>Credits</i>
Professional Education	56
Computers	
Fashion Industry	
Visual Merchandising or Fashion Promotion	
Supervision and Management	
Survey of the Fashion Environment	
Textiles for the Apparel Industry	
Twentieth-Century Fashion	
Computations for Merchandise Planning and Control	
Buying Simulation	
Fashion Forecasting	
Importing/Exporting Fashion	
Advanced Store Development	
Fashion Seminar	
Art History	
General Education	28
Business Courses	27
Approved Electives	15
	126

Minor in Fashion Merchandising

Students from any department in the University may declare a minor in fashion merchandising, which consists of 18 credits. The following 9 credits are required: FDE 240 Survey of the Fashion Industry I; FDE 241 Survey of the Fashion Industry II; and FDE 341 Computations for Merchandise Planning and Control. With the guidance of a track adviser, students will choose 9 additional credits from the list of professional fashion merchandising courses; 6 of these credits must be at the 300 or 400 level. A cumulative GPA of 2.0 must be attained in these courses.

Degree Requirements in Home Fashions Merchandising

	<i>Credits</i>
Professional Education	52
Interior Design	
Computers	
Fashion Industry	
Visual Merchandising	
Supervision and Management	
Textiles	
Computations for Merchandise Planning and Control	
Buying Simulation	
Fashion Forecasting	
Importing/Exporting Fashion	

Advanced Store Development	
Fashion Seminar	
Art History	
General Education	42
Business Courses	24
Approved Electives	8
	126

Courses in Fashion Design and Merchandising

FDE 145 Computers for Fashion I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. To introduce the students to basic principles of the computer and to become familiar with it as a drawing and communication tool as used in the fashion industry.

FDE 201-202 Garment Construction for the Professional. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. The basic principles involved in garment construction with emphasis on professional design-room practices in sewing, pressing, and finishing of garments. Knowledge of basic sewing skills is advisable.

FDE 205-206 Patternmaking. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Basic principles of patternmaking, developing various styles from master patterns, and creating designs to be constructed in muslin.

FDE 207-208 Fashion Drawing I. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Basic drawing of the fashion figure. An anatomical study using various media.

FDE 210 Visual Merchandising. Semester course; 3 lecture hours. 3 credits. Theory and practical application of visual merchandising techniques in the fashion industry. Development of design concepts, fixturing, layout and presentation for retail, manufacturing, and special events. Use of computer-aided design.

FDE 211, 212 Garment Construction. Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Students are exposed to basic sewing with emphasis on detailed construction, basic fitting, and pressing techniques. Simple garments will be constructed from commercial patterns. Not open to fashion design majors.

FDE 213-214 Design Theory. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Basic principles of design: line, color, and texture are employed to develop styles in two-dimensional form for specific markets within the garment industry. Exposure to various sources for design inspiration will be encouraged.

FDE 215-216 Draping. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Basic principles of draping muslin on the dress form, the three-dimensional technique of making patterns.

FDE 240 Survey of the Fashion Industry I. Semester course; 3 lecture hours. 3 credits. A survey of the apparel industry emphasizing the role of the designer and the various stages of production.

FDE 241 Survey of the Fashion Industry II. Semester course; 3 lecture hours. 3 credits. An analysis of the apparel industry emphasizing retail aspects.

FDE 243 Supervision and Management. Semester course; 3 lecture hours. 3 credits. The study of human relations as it applies to the fashion industry. Emphasis is placed on basic leadership skills to effectively supervise people from a variety of cultures. Topics include team building, negotiation, time and stress management, and communication.

FDE 245 Computers for Fashion II. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Explore the world of computers while applying the principles of imaging and desktop publishing as they are used in the fashion industry.

FDE 250 Concepts of Fashion Merchandising Environment. Semester course; 3 lecture hours. 3 credits. Basic research techniques and analysis skills for evaluating contemporary fashion and apparel topics.

FDE 290 Textiles for the Fashion Industry. Semester course; 2 lecture hours and 1 laboratory hour. 3 credits. This course is designed to develop an understanding of the factors which influence the tactile behaviors of fabrics during garment design, manufacture and wear. Apparel fiber construction, finish and properties both natural and man-made will be analyzed.

FDE 301-302 Advanced Draping I. Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Prerequisites: FDE 202, 206, 208, 214, and 216. Corequisite: 303-304. Advanced methods of draping on the dress form, development of designs from sketches, and the creation of original designs. Frequent critique of student designs.

FDE 303-304 Advanced Design I, II. Continuous course; 2 lecture hours. 2-2 credits. Prerequisite: Junior standing with completion of all sophomore FDE studio requirements. Development of fashion designs related to the apparel industry. Weekly assignments of original ideas are presented in 2-D sketches for discussion and critique. Development of a collection is analyzed. Extensive research in design and also fabrication of design(s) will be stressed. Classroom participation is imperative.

FDE 305-306 Advanced Patternmaking. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: FDE 202 and 206. Methods of developing and grading professional patterns. Production techniques used in the garment industry will include layout, marking, cutting, and construction of designs.

FDE 313-314 Fashion Drawing II. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: FDE 208. Advanced drawing and rendering techniques of apparel on the fashion figure.

FDE 319 Twentieth-Century Fashions. Semester course; 3 lecture hours. 3 credits. Writing intensive. An in-depth study of twentieth-century fashions from the historical and socioeconomic point of view. Hands-on examination of vintage garments and field trips to museum collections.

FDE 341 Merchandise Planning and Control. Semester course; 3 lecture hours. 3 credits. Theory and mathematical application of the major elements of retail buying and merchandising. Discussion covers planning and control of inventory, profit analysis, merchandise pricing, and purchase negotiation.

FDE 342 Retail Buying Simulation. Semester course; 3 lecture hours. 3 credits. Prerequisite: FDE 341. Practical application of retail buying skills in relation to the calculations for a six month buying plan for a department within a department store. The simulation includes projection of sales, stock levels, markdowns, purchases, gross margin, markup, etc.

FDE 343 Fashion Forecasting. Semester course; 3 lecture hours. 3 credits. Using basic principles to identify, track and analyze current trends, students will develop a fashion forecast. Demographic, economic, social, and historical forces of behavior will be evaluated.

FDE 350 Fashion Promotion. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Through lecture and field experience, students are exposed to technical and creative aspects of fashion promotion and public relations. A variety of media are utilized. Students may be required to spend time outside the classroom on promotional activities.

FDE 360 Importing and Exporting Fashion. Semester course; 3 lecture hours. 3 credits. Prerequisites: FDE 190 and FDE 240. An overview and introduction to import/export theory, government regulations and global sourcing. Students will gain insight to the dynamics and cultures of the international fashion marketplace.

FDE 390 Historic and Ethnic Textiles. Semester course; 3 lecture hours. 3 credits. Prerequisite: FDE 290 or IDE 446 or permission of instructor. An examination of the history of textile design and production around the world.

FDE 391 Fashion Workshop. Semester course; variable; 1-2 credits per semester. May be repeated for a maximum total of six credits. A typical workshop offered in various areas of fashion not included in the regular curriculum. See the *Schedule of Classes* for particular areas to be covered each semester.

FDE 401-402 Advanced Draping II. Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Prerequisites: FDE 302, 304, 306, and 314. Corequisites: 413-414. Advanced methods and techniques for the designer of haute couture. Individual creativity and uniqueness of style are encouraged. Frequent critique of student designs.

FDE 403-404 Fashion Drawing III. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Prerequisite: FDE 314. First semester: emphasis on a variety of media and rendering techniques to communicate students' designs. Second semester: development of a portfolio.

FDE 405 Tailoring I. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: FDE 202 or equivalent. Construction techniques unique to tailoring.

FDE 413-414 Advanced Design II. Continuous course; 2 lecture hours. 2-2 credits. Prerequisite: Senior standing with completion of all junior FDE studio requirements. Development of fashion design related to the apparel industry. Weekly assignments of original ideas are presented in 2D sketches for discussion and critique. Extensive research and classroom participation are imperative.

FDE 443 Supervision and Management in Fashion Merchandising. Semester course; 3 lecture hours. 3 credits. This course will develop leadership skills needed by first-line supervisors. The study of human relations in the management hierarchy of the fashion industry will be emphasized.

FDE 445 Advanced Application in Store Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: FDE 341. Studies operational functions as related to the objective and decision making procedures inherent in successful small business retailing. Quantitative strategies will be applied as students develop a model plan for a retail business.

FDE 490 Fashion Seminar. 2 lecture hours. 2 credits. A professional seminar for senior fashion majors. Lectures will cover career opportunities, job preparation, and other topics according to the needs of the class.

FDE 493 Fashion Internship. 1-3 credits. Open to junior and senior-level fashion majors only. A practicum in which students apply on-the-job the formal classroom and studio training they have received in their option (design, illustration, merchandising) on campus. It may be a single internship for three credits or several (maximum three) totaling three credits.

Department of Interior Design

M. Buie Harwood

Professor and Chair (1985) BFA 1972 and MFA 1973 Louisiana Tech University

Gao, Chaoyi (1993) *Assistant Professor* BA 1982 Suzhou Institute of Silk Textile Technology; MA 1988 Central Academy of Arts and Design; MFA 1993 Virginia Commonwealth University

Long, James T. (1981) *Associate Professor* BFA 1976 and MArch 1979 University of Kansas

Marlow, Craig H. (1977) *Associate Professor* BFA 1971 and MFA 1973 Louisiana Tech University

Whitehead, W. Camden (1985) *Associate Professor* BA 1976 Averett College; MArch 1980 Virginia Polytechnic Institute and State University

Yung, Ringo (1970) *Professor* BA and BFA 1961 Tientsin University; MFA 1970 University of Kansas

Emeriti Faculty

Field, Jerry J. *Professor Emeritus* BS Virginia Commonwealth University; Diploma Parsons School of Design

Gunter, Ben D. *Professor Emeritus* AB Bridgewater College; BFA Virginia Commonwealth University; MEd University of Virginia

Hamilton, Dorothy Tennent *Associate Professor Emerita* Certificate Virginia Commonwealth University

Hester, Robert F. *Professor Emeritus* BA Wake Forest College; Diploma Parsons School of Design; Graduate Study University of London; MA Cornell University; National Trust Summer School (England)

The Department of Interior Design offers a FIDER-accredited, professional program which seeks to produce competent creative designers whose design solutions are based on human response in the contemporary environment. Mastery of design skills, development of productive habits, knowledge of resources, and an awareness of interrelated disciplines equip the student with the tools and expertise necessary to pursue creative design positions or to enter programs of advanced study.

Admission to the degree program follows successful completion of the freshman foundation program, or, in the case of transfer students, equivalent preparation at other institutions. Sophomore-level students are required to purchase a laptop computer and software. The make of the computer and the software is determined by the department and the total cost will not exceed \$3,500.00.

The department sponsors numerous field trips that enables students to gain exposure to the work of prominent designers. The cost of voluntary trips should not exceed \$250.00 annually.

The department has two scholarships available to full-time interior design students at the junior- or senior-level: the Roger Baugh Scholarship and the Hamilton-Field Scholarship. For more information contact the department chair.

Degree Requirements in Interior Design

	<i>Credits</i>
Studios	
Foundation Program	16
Creative Design	28
Technical Knowledge	18
Communication Skills	15
General Studies	
English 101,200	6
English	6
Introduction to the Arts	17
Art History to include IDE 251,252,253	
Approved Electives to include three credits in social sciences, three credits in mathematics, and four credits in laboratory science	21
Business Procedures	3
	132

Courses in Interior Design

IDE 103-104 Introductory Studio Course. Continuous course;1 lecture and 2 laboratory hours. 2-2 credits. A practical course in which the student becomes familiar with fundamentals of interior design through work with floor plans, furniture selection and arrangement, floor and wall compositions, color harmony, wallpaper, and other aspects of design. Not open to interior design majors. Offered evenings only.

IDE 201 Interior Design Studio I. Semester course; 9 studio hours. 3 credits. Identification and applications of fundamental interior design issues through applied projects: problem definition and expansion, analysis, design processes, behavior and perception. Interior design majors only.

IDE 202 Interior Design Studio II. Semester course;9 studio hours. 3 credits. Prerequisites: IDE 201 and IDE 221.Discussion and application of design theories and techniques with emphasis on interior design through applied projects:design processes and procedures, spatial and functional analysis and design, applied human factors, behavior and perception, the selection of materials and furnishings. Interior design majors only.

IDE 211 Introduction to Interior Design I. Semester course; 3 lecture hours. 3 credits. Contemporary theory and technique in interior design: manipulation of space, form, and light, behavior; anthropometrics, ergonomics.

IDE 212 Introduction to Interior Design II. Semester course;3 lecture hours. 3 credits. Contemporary theory and technique in interior design:research methods and programming.

IDE 221-222 Interior Design Graphics. Continuous course;1 lecture and 6 studio hours. 3-3 credits. Introduction to the various presentation media and techniques using the drawing board and the computer to provide basic communication skills such as drafting, rendering, perspective drawing, layout organizations, and model making for professional graphic presentations.

IDE 251 Design in Historic Interiors and Architecture I. Semester course;3 lecture hours. 3 credits. Prerequisites:AFO 105-106 or ARH 103,104.Writing intensive. A survey of the major styles in interior and exterior architecture and furnishings from antiquity through the eighteenth century.

IDE 252 Design in Historic Interiors and Architecture II. Semester course;3 lecture hours. 3 credits. Prerequisites:AFO 105-106 or ARH 103,104.Writing intensive. A survey of the major styles in interior and exterior architecture and furnishings from the 19th to the turn of the twentieth century.

IDE 301 Interior Design Studio: Retail and Exhibition Design. Semester course;2 lecture and 6 studio hours. 4 credits. Prerequisites: IDE 202,IDE 212,and IDE 222.Design is emphasized within retail and exhibition interior design.Interior design majors only.

IDE 302 Interior Design Studio:Office and Institutional Design. Semester course;2 lecture and 6 studio hours. 4 credits. Prerequisites: IDE 202,IDE 212,and IDE 222.Design is emphasized within office and institutional environments. Interior design majors only.

IDE 303 Interior Design Studio: Hospitality and Public Spaces. Semester course; 2 lecture and 6 studio hours. 4 credits. Prerequisites: IDE 202, IDE 212, and IDE 222. Design is emphasized in hospitality and public space interior design.Interior design majors only.

IDE 321 Advanced Interior Design Graphics I. Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: IDE 202 and 222. Study of advanced interior design graphic communication skills, including working drawings and interior details.

IDE 322 Advanced Interior Graphics II. Semester course;1 lecture and 6 studio hours. 3 credits. Prerequisites: IDE 202 and 222.Study of advanced interior design graphic communication skills including complex three-dimensional space delineation and experimentation with a variety of techniques and media.

IDE 323 CAD for Interior Design. Semester course;1 lecture and 6 studio hours. 3 credits. Introduction to computer-aided design, its uses and applications for interior design.Interior design majors only.

IDE 351 Design in Twentieth-Century Interiors and Architecture. Semester course;3 lecture hours. 3 credits. Prerequisite: AFO 105-106 or ARH 103,104. Investigation and analysis of the major design theories and movements of the twentieth century and the growth of the profession of interior design.

IDE 401 Advanced Interior Design. Semester course; 2 lecture and 6 studio hours. 3 credits. Prerequisites:IDE 301,IDE 302,IDE 303,IDE 322,and IDE 441.Problems exploring period and contemporary design and their relationships are planned to meet the needs of specific clients. To prepare students for the professional world,the problems are as varied as possible. Interior design majors only.

IDE 431 Business Procedures. Semester course; 3 lecture hours. 3 credits. Study of interior design business practices. Interior design majors only.

IDE 441 Color and Light. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: IDE 202 and IDE 222. Basic electricity

and illumination and color and their influence on interior spaces; theory and practical applications.

IDE 442 Materials and Systems. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: IDE 202 and IDE 222. Contemporary theory and technique in the design of buildings as related to interior design. Structural, HVAC, sound and water systems, and the nature of materials.

IDE 443 Furniture Design I. Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: IDE 222. Original student designs are developed for cabinetmaking and millwork in interior design.

IDE 444 Furniture Design II. Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: IDE 222. Original student designs are developed through the study of structure and materials. Design for mass production is explored.

IDE 445 Furnishings and Interior Materials. Semester course; 3 lecture hours. 3 credits. Investigation and practical application of furnishings and materials in the interior environment. Interior design majors only.

IDE 446 Textiles for Interior Design. Semester course; 3 lecture hours. 3 credits. Investigation and practical application of soft materials in the interior environment.

IDE 491 Topics in Interior Design. Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of the instructor. An in-depth study of a topical issue in interior design. See the *Schedule of Classes* for specific course offerings.

IDE 493 Interior Design Internship. Semester course; 3 credits. Prerequisite: Consent of coordinator and department chair. Supervised practical work experiences are coordinated with professional interior designers in the field. Interior design majors only.

Department of Music

- Austin, Terry L. (1986) *Associate Professor* BME 1975 Indiana University; MA 1978 University of Hawaii; PhD 1984 University of Wisconsin
- Batty, L. Wayne (1949) *Professor* BME Illinois Wesleyan University; BM Kansas City Conservatory; MM Chicago Musical College; MM 1949 Roosevelt University
- Bick, Donald A.* (1974) *Associate Professor* BM 1970 Eastman School; MM 1974 University of Maryland
- Bilyeu, Landon A. (1974) *Associate Professor* BM Centenary College; MM 1964 University of Tulsa
- Bilyeu, Francile (1984) *Assistant Professor* BM 1962 Kansas State University; MM 1963 University of Tulsa
- Brooks, Christopher A. (1990) *Associate Professor* BA University of Maryland; MA University of Michigan; MM and PhD University of Texas, Austin
- Carrier, Loran F. (1973) *Associate Professor* AA Assumption Abbey; BA Queen of Apostles; BM and MM Catholic University; MM Washington Music Institute; DMA 1970 University of Maryland
- Day, Melanie Kohn (1987) *Assistant Professor* BA 1975 Maryville College; MM 1978 and MM 1980 Boston University
- Donnell, Cynthia S. (1979) *Associate Professor* BME and MM 1974 University of North Carolina, Greensboro
- Guerard, Sandra L. (1982) *Associate Professor* BS Danbury State College; MA 1973 and PhD 1981 University of Connecticut
- Guthmiller, John (1988) *Associate Professor* BME 1974 Murray State University; MM 1976 Florida State University; DMA 1982 University of Colorado
- Hammel, Bruce (1988) *Associate Professor* BME 1978 State University of New York, Potsdam; MM 1981 University of Michigan; DM 1989 Florida State University
- Lohuis, Ardyth J. (1969) *Professor* BSM Illinois Wesleyan University; MM Northwestern University; DMA 1970 University of Cincinnati, College-Conservatory of Music
- Marrion, Melissa W. (1963) *Professor* BM 1961 and MM 1963 University of Cincinnati College-Conservatory of Music
- Mirr, Edward A.* (1960) *Associate Professor* BA Queens College; MA 1956 Columbia University Teacher's College

- Murray, Robert P. (1978) *Professor* BM American Conservatory of Music; MM American Conservatory of Music; DMus 1976 Indiana University
- Newlin, Dika (1978) *Professor* BA Michigan State University; MA University of California; PhD 1945 Columbia University
- Patykula, John T. (1984) *Associate Professor* BM 1973 North Carolina School of the Arts; MM 1982 Virginia Commonwealth University
- Richards, Douglas J. (1979) *Associate Professor* BM Berklee College of Music; MM 1973 Florida State University
- Vlahcevic, Sonia K. (1967) *Professor* BA and MM New England Conservatory; PhD 1975 Catholic University
- West, Charles W. (1987) *Professor* BMBA 1971 University of Northern Colorado; MFA 1973 and DMA 1975 University of Iowa

Emeriti Faculty

- Blank, Allan *Professor Emeritus* BA Washington Square College of New York University; MA University of Minnesota
- Robinson, J. Lawrence *Associate Professor Emeritus* AB University of South Carolina; MM University of Michigan
- Smetana, Frantisek *Professor Emeritus* Diploma Prague Conservatory of Music; Diploma Ecole Normale de Musique
- Wilson, Neil E. *Professor Emeritus* BFA and MM University of New Mexico; PhD Indiana University

* Member, Richmond Symphony Orchestra

The Department of Music is committed to the advancement of western art music and jazz as academic disciplines, as fields of professional endeavor, and as a viable presence in the community. Entrance and graduation requirements comply with the National Association of Schools of Music guidelines. An audition and written general musicianship examination and interview are necessary for admission. Students must also meet the general admission requirements of the University. For additional information contact the Department of Music, P.O. Box 842004, 922 Park Avenue, Virginia Commonwealth University, Richmond, VA 23284-2004.

All freshmen entering the department are classified as music foundation majors for their first year. Following completion of freshman-level theory and aural skills, and upon completion of specific performance achievement levels established by the various degree tracks, students may apply for admission into a specific Bachelor of Music degree track (performance, music education, or composition) or the Bachelor of Arts in Music degree program.

The Bachelor of Music degree is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts, and sensitivities essential to the professional life of the musician. At the center of the instructional program for the Bachelor of Music degree is the "core curriculum," comprising 30 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in basic music theory, aural skills, music history, conducting, and advanced theoretical skills.

The Bachelor of Music/Music Education track incorporates requirements necessary to qualify for the state of Virginia's Collegiate Professional Certificate to teach music in the public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states.

The Bachelor of Arts in Music is designed for students who desire a program with a strong emphasis in music, combined with a strong liberal arts component, and a minor in an area other than music. Included are courses

in basic theory, aural skills, music history, applied music, as well as restricted and free music electives.

Electives in Music

Students majoring in a field other than music may register for ensembles, private or class lessons, and a variety of classroom courses in music. Class lessons in voice, piano and guitar, Music Appreciation, African-American Music, Introduction to Writing Music, Basic Music Skills, and Special Offerings in Music are specifically designed for the non-music major. Other courses are open to those who have adequate background.

Minor in Music

Any VCU student may declare a minor in music. The music minor comprises 22 credits distributed among the areas of music history/theory, ensemble performance, private lessons, and music electives. A music faculty adviser counsels every student about the selection of appropriate courses based on the student's competence and interest. Using the guidelines that follow, students have several options to meet their minor requirements:

- Music history and theory selected from MHT 106,120, 135, 136,220,243,250, 321,322, 323, 324 for a total of nine credits.
- Large ensemble for four credits.
- Private lessons for four credits. One credit per semester; all credits to be earned on a single instrument. Students must earn Achievement Level I. Music electives for a total of five credits. MHT 117, MHT 201, and music literature courses are suggested.

Graduate Study

The department offers graduate degrees in solo performance, composition, conducting, and music education. See the *Graduate Bulletin* for courses and curricula.

Fees

All students registering for private music lessons pay an applied music fee. This fee is additional to the comprehensive fee charged only to majors in the School of the Arts. The cost for private lessons is \$130 per semester for one credit and \$260 per semester for two or three credits.

Community School of the Performing Arts

Pre-college, university, and adult students may receive private or class instruction through the Community School of the Performing Arts, an adjunct to the Department of Music. Registration information and fee schedules can be obtained from Dr. Glenn Winters, coordinator of the Community School, at 828-2772. No degree credit is granted for either private or class lessons taken through the Community School.

Degree Requirements in Music

Applied Music Achievement Levels. Eight achievement levels have been established for applied instrumental and vocal study. These levels are explicit in terms of expected repertoire, musicianship/style, technique, and sight-reading. "Honors" may be earned by students in any area who go beyond the eighth level. While freshmen normally earn Level I at their first semester juries, transfer students may be awarded a higher level based on their entrance auditions. The table below indicates the achievement levels required for graduation.

Bachelor of Music Performance (all areas except synthesizer and jazz)	VIII
Synthesizer	VIII in principal area: III in secondary keyboard
Jazz	IV in classical studies VI in jazz
Music Education Composition	VI VI in Composition IV in Performing Medium
Bachelor of Arts in Music All areas	IV

Recital Convocation Attendance. All undergraduate majors are required to pass four semesters of recital/convocation attendance for graduation. During each semester of enrollment, the student must attend a minimum of 10 concerts or recitals plus 75 percent of all departmental convocations in order to earn credit.

Master Class. This consists of participation in weekly master classes in the student's applied major area. For students in the Bachelor of Music Program, eight semesters are required for performance and composition tracks; six semesters for the music education track. Students in the Bachelor of Arts in Music Program must complete four semesters of master class.

Ensemble Requirements

To ensure consistent skill development in ensemble settings, only one large ensemble credit per semester will be counted toward a student's large ensemble requirements. Students whose principal performing medium (major instrument) is a band or orchestral instrument or voice must satisfy the large ensemble requirement by performing in a large ensemble on that principal performing medium. An exception is made in the case of jazz studies majors whose principal instrument is saxophone. Jazz saxophone majors may elect to satisfy the large ensemble credit on another woodwind instrument. Bachelor of Music/Performance pianists must satisfy the ensemble electives by completing four of the six elective credits as pianists (i.e., by playing the piano in ensembles). Bachelor of Music/Performance organists must satisfy the large ensemble requirement through credit earned in a large choral ensemble. Bachelor of Music/Performance voice majors may elect to substitute Opera Theater for a large ensemble in the semester in which the Senior Recital is presented. Bachelor of Arts in Music students must earn six ensemble credits, which are not restricted with regard to large or small ensemble.

Bachelor of Music/Performance**Brass, Percussion, Strings, Woodwinds**

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APM 173-174,273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Large Ensembles*	7(4) [†]
Ensemble Electives	5(8) ^Δ
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Restricted Music Electives (Selected from Aural Skills VI and any MHT or MUC 300- or 400-level course not otherwise required in the student's curriculum.)	8
Pedagogy	2
Principal Performing Medium	24
Secondary Performing Medium [†]	3
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General Studies	
English 101, 200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3
Social Science Elective	3
Ethics	3
Mathematics/CSC/STA Elective	3
Laboratory Science Elective	4
Open Electives	15
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

[†] Large ensemble requirements for guitar majors are 4 credits.

^Δ Ensemble electives for guitar majors are 8 credits.

[‡] Secondary Performing Medium requirements must be fulfilled with studies on a different instrument.

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

[†] Secondary Performing Medium requirements must be fulfilled with studies on a different instrument.

^Δ Offered every other year.

Piano

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills Advanced (APM 273-274,373-374)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Large Ensembles*	2
Ensemble Electives (4 as pianists)	6
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Restricted Music Electives (Selected from Aural Skills VI and any MHT or MUC 300- or 400-level course not otherwise required in the student's curriculum.)	6
Accompanying	4
Pedagogy [†]	2
Principal Performing Medium	24
Secondary Performing Medium ^Δ	3
Piano Literature [†]	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General Studies	
English 101,200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3
Social Science Elective	3
Ethics	3
Mathematics/CSC/STA	3
Laboratory Science Elective	4
Open Electives	15
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

[†] Offered every other year.

^Δ Secondary Performing Medium requirements must be fulfilled with studies on a different instrument.

Organ

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills Advanced (APM 273-274,373-374)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Large Ensembles (Choral)*	6
Ensemble Electives	2
Accompanying	4
Pedagogy ^Δ	2
Lyric Diction	6
Counterpoint	3
Principal Performing Medium	24
Secondary Performing Medium [†]	4
Organ Literature and Design ^Δ	2
Service Playing ^Δ	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General Studies	
English 101,200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3
Social Science Elective	3
Ethics	3
Acoustics (Laboratory Science Elective)	3
Mathematics/CSC/STA	3
Open Electives	11
	<hr/>
	124

Synthesizer

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APM 173-174,273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Large Ensembles*	5
Ensemble Electives	7
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Performing Medium-synthesizer	18
Performing Medium-piano, organ or harpsichord	9
Computers in Music	3
MIDI Programming and Synthesis	3
Synthesizer and Composition	3
Master Class (at least two semesters in keyboard,six in synthesizer)	0
Junior Recital	0
Senior Recital	0
General Studies	
English 101, 200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3

Social Science Elective	3
Ethics	3
Mathematics/CSC/STA	3
Laboratory Science Elective	4
Open Electives	16
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

Voice

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APM 173-174,273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Large Ensembles*	7 [†]
Ensemble Electives	3
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Opera Theatre ^Δ	2
Pedagogy	2
Principal Performing Medium	24
Secondary Performing Medium [‡]	3
Lyric Diction	6
Song Literature [◊]	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General Studies	
English 101,200 Composition and Rhetoric I,II	6
Foreign Language 101-102	8
Social Science Elective	3
Ethics	3
Mathematics/CSC/STA	3
Laboratory Science Elective	4
Open Electives	10
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

[†] In the semester of the senior recital, voice majors may substitute Opera Theatre for one large ensemble credit.

^Δ THE 107 Introduction to Stage Performance or DAN 101 Modern Dance Technique I can be substituted with departmental approval.

[‡] Secondary Performing Medium requirements must be fulfilled with studies on a different instrument.

[◊] Offered every other year.

Jazz Studies

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APM 173-174,273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Supportive Courses	
Large Ensembles*	4
Jazz Ensembles	9
Recital/Convocation Attendance (four semesters)	0
Performing Medium (8 credits classical, 16 credits jazz)	24
Jazz Improvisation	6
Jazz Arranging	12
Master Class (4 semesters classical, 4 semesters jazz)	0
Junior Recital	0
Senior Recital	0

General Studies	
English 101,200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3
Social Science Elective	3
Ethics	3
Mathematics/CSC/STA	3
Laboratory Science elective	4
Open Electives	10
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

Bachelor of Music/Composition

Music Core Curriculum	<i>Credits</i>
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APM 173-174,273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive Courses	
Class Composition	2
Performing Medium	12
Private Composition	13
Counterpoint	3
MIDI Programming and Synthesis	3
Orchestration	3
Form and Analysis	2
Advanced Keyboard Skills (APM 373-374)	2
Large Ensembles *	5
Ensemble Electives	7
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Master Class (8 semesters:4 in performing medium, 4 in composition)	0
Senior Recital	0
General Studies	
English 101,200 Composition and Rhetoric I,II	6
Survey of European History 101 or 102	3
Social Science Elective	3
Ethics	3
Mathematics/CSC/STA	3
Laboratory Science	4
Open Electives	12
	<hr/>
	124

* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

Bachelor of Music/Music Education

Music Core Curriculum	<i>Credits</i>	
Integrated Theory	15	
Aural Skills I-V	5	
Keyboard Skills (APM 173-174,273-274)	4	
Introduction to Musical Styles	2	
Introduction to World Music	1	
Music History	8	
Conducting	2	
Recital/Convocation (four semesters)	0	
Supportive Courses		
Conducting Laboratory Ensembles	1	1
Lyric Diction*	0	3

*Instrumental Vocal/Choral
Track Major Track Major
Credits Credits*

Class Instruments (APM 181,183,184, 185, 187,193†,195)	7	6
Principal Performing Medium	18	18
Secondary Performing Medium Δ	3	3
Large Ensembles \ddagger	7	7
Small Ensemble Electives \ddagger	2	0
Jazz Laboratory OR Small Jazz Ensemble OR Jazz Private Lessons	1	1
Junior Recital	0	0
Master Class (six semesters)	0	0
General Studies		
English 101,200 Composition and Rhetoric I, II and a Literature	9	9
Mathematics	3	3
Mathematics or Science Elective	3	3
Survey of American History (HIS 103 or 104)	3	3
Social Science Electives	6	6
Physical Education (or Dance)	1	1
MAT/CSC/STA Elective OR Computers in Music	3	3
Laboratory Science Elective or Acoustics	3	3
Professional Courses		
Education 301 Human Development and Learning	3	3
Music in General Education	2	2
Processes of Music Education	3	3
Observation in Music Education	1	1
Conducting and Rehearsal Techniques	3	3
Student Teaching	12	12
	131	131

* Required of Vocal/Choral Majors only (vocalists, keyboardists who plan to become certified in vocal/choral music).

† Required of Instrumental Majors Certification track only.

Δ Must be on the same instrument (For Vocal/Choral Majors: Voice for keyboardists; keyboard for vocalists).

\ddagger Only one large ensemble each semester may be used to fulfill the large ensemble requirement. Large ensemble must be related to student's area, e.g., Vocal/Choral Majors select choral ensembles, Instrumental Majors select instrumental ensembles.

\ddagger Selected from one of the established minor programs in the University or planned as a coherent series of studies. An advisory committee for each BA student will approve the Secondary Concentration course sequence.

Courses in Applied Music

Upper-division undergraduate students may enroll for selected 500-level graduate courses with permission of the department chair and instructor. See the *Graduate Bulletin* for course descriptions.

APM 161-162 Lyric Diction. Continuous course; 3 lecture hours. 3-3 credits. A study of English, Italian, ecclesiastical Latin, French, and German stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet.

APM 165-166/265-266/365-366 Aural Skills I-VI. Continuous course; 2 laboratory hours. 1-1 credit. Development of skills in melodic and rhythmic dictation, harmonic identification, and sight-singing. Emphasis throughout is placed on current uses of technology within the discipline. Designed as companion courses to MHT 135-335. Open to non-music majors by permission of department chair.

APM 173-174/273-274 Keyboard Skills. Continuous course; 2 laboratory hours. 1-1 credit. Acquisition of keyboard performance skills with emphasis on reading, keyboard harmony, and improvisation. Open only to music majors.

APM 181-182 Class Lessons in Strings. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies and teaching knowledge on violin, viola, cello, or string bass. Acquisition of basic techniques on two additional string instruments. Designed for Music Education majors.

APM 183-184 Class Lessons in Woodwinds. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon, and saxophone. Designed for Music Education majors.

APM 185-186 Class Lessons in Brass. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies and teaching knowledge on trumpet, baritone, tuba, trombone, or French horn. Acquisition of basic techniques on two additional brass instruments. Designed for Music Education majors.

APM 187-188 Class Lessons in Percussion. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies and teaching knowledge on snare drum. Acquisition of basic techniques on xylophone or timpani. Designed for Music Education majors.

APM 191-192 Class Lessons in Piano. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies at the keyboard with emphasis on finger dexterity and reading. No prior knowledge of music required. Not open to music majors.

APM 193-194 Class Lessons in Voice. Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies in voice including vocal production, diction, solo, and group performance.

APM 195-196 Class Lessons in Guitar. Continuous course; 2 laboratory hours. 1-1 credit. Acquisition of performance competencies in guitar including chording, single-string technique, plectrum, and finger styles.

APM 197-198 Class Lessons in Organ. Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: Permission of instructor. Achievement of performance competencies in organ including pedal technique, coordination of hands and feet, and registration.

APM 199 Recital/Convocation Attendance. Semester course; no credit. Course may be repeated without limit. Attendance at weekly departmental convocations and ten additional concerts or recitals each term. Music majors only.

Bachelor of Arts in Music

	<i>Credits</i>
Core Curriculum	
Integrated Theory (MHT 135-236)	12
Aural Skills (APM 165-266)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Principal Performing Medium*	12
Ensembles	6
Recital/Convocation (four semesters)	0
Master Class (four semesters)	0
Keyboard Skills	2
Music Electives (selected from: MHT and MUC 300-400; APM 381)	6
General Studies	
English 101,200 Composition and Rhetoric I,II and Literature)	12
Foreign Language \ddagger	14
Laboratory Science/Natural Science	7
Ethics	3
Mathematical and Computer Science Δ (at least one course in each area)	6
Survey of European History (HIS 101 or 102)	3
Social Science Elective	3
Minor or Secondary Concentration \ddagger	18
Open Electives	5
	124

* Achievement Level IV required.

\ddagger Four semesters of one language or two semesters and Lyric Diction APM 161-162 Lyric Diction.

Δ Includes computer related courses listed under Business (BUS 160-161,162-163, 164-165,166-167,168).

APM 251 Jazz Improvisation I. Semester course; 3 lecture hours. 3 credits. A study of basic compositional techniques that can be used in creating a musically effective improvised solo in the jazz medium.

APM 252 Jazz Improvisation II. Semester course; 3 lecture hours. 3 credits. Prerequisite: APM 251 or permission of instructor. Advanced melodic, harmonic, and rhythmic improvisational techniques as applied to contemporary jazz compositions.

APM 271 Sight Reading. Semester course; 1 lecture hour. 1 credit. A practical course for singers and instrumentalists designed to develop facility in sight reading.

APM 282 Conducting Lab Ensembles. Semester course; 1 laboratory hour. 5 credits. May be repeated once for credit. Reading and conducting experience with a band, chorus, or orchestra. Literature emphasized will be appropriate for elementary through secondary school groups. Offered only in the spring semester.

APM 299 Master Class. Semester course; no credit. Course may be repeated without limit. Participation in weekly master classes in student's applied major area.

APM 300-Level Private Instruction: Principal and Secondary Performing Mediums. Semester courses; One half-hour or 1 hour private lesson per week. 1 to 3 credits. Repeatable without limitations. Extra fee required. One hour practice daily for each credit. Lessons are available in the following areas: bassoon, carillon (1 credit only), cello, clarinet, composition (by permission of instructor), double bass, drum set (undergraduate, 1 credit only), euphonium, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, synthesizer, trombone, trumpet, tuba, viola, violin, and voice. In order to register for any private lesson, non-music majors must obtain correct course number in either Room 132, Performing Arts Center, or at the music table in the VCU Student Commons during registration; music majors need to consult their advisers.

APM 351 Jazz Improvisation III. Semester course; 3 lecture hours. 3 credits. Prerequisite: APM 252 or permission of instructor. Techniques of thematic improvisation, stating a melody, and improvising on contemporary jazz compositions. Availability contingent upon student demand and faculty resources.

APM 352 Jazz Improvisation IV. Semester course; 3 lecture hours. 3 credits. Prerequisite: APM 351 or permission of instructor. Special emphasis on non-tonal and pan-tonal improvisation. Availability contingent upon student demand and faculty resources.

APM 362 Service Playing. Semester course; 1 lecture and 2 laboratory hours. 2 credits. The development of skills necessary for church service playing; transcription of piano and orchestral scores; accompanying and hymn playing; conducting from the console; the accompaniment of chant. Offered alternate years.

APM 370 Large Ensembles. Semester course; 3 laboratory hours. 1 credit. An audition is prerequisite for sections 1, 3, and 4. Sections: (1) orchestra, (2) University Band, (3) symphonic wind ensemble, (4) Commonwealth Singers, (5) Choral Arts Society. Each section may be repeated up to eight times for credit.

APM 373-374 Advanced Keyboard Skills. Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: APM 274 or permission of instructor. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation, and reducing scores at the keyboard.

APM 375-376 Score Reading. Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: APM 274 or equivalent. Acquisition of skill in reducing scores at the keyboard, beginning with simple three-part works and progressing to full instrumentation.

APM 380 Jazz Laboratory. Semester course; 2 laboratory hours. 1 credit. Prerequisite: MHT 236. Development of the basic improvisational skills and examination of performance practice in the jazz idiom.

APM 381-382 Conducting. Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. Prerequisites: APM 266 and MHT 236. Development of fundamental gestural skills for conducting instrumental and choral ensembles including simple and compound meters, multimetric music, and aleatoric music. Emphasizes score reading, aural analysis skills, and terminology. Open to music major.

APM 383, 384 Musical Theater. Semester courses; 4 laboratory hours. 2,2 credits. Prerequisite: APM 193 or equivalent. An exploration of the fundamentals of musical theater including production, staging, and performing. Each course may be repeated for credit three times.

APM 385 Opera Theater. Semester course; 1 lecture and 4 studio hours. 2 credits. May be repeated up to four times for credit. Prerequisite: Permission of instructor required. Explores aspects of opera through study, written research, and fully-staged public performances of operatic scenes and/or one-act operas.

APM 390 Small Ensembles. Semester course; 2 or 3 laboratory hours. 0.5 or 1 credit. Auditions required for all sections. Each section may be repeated up to eight times for credit. Sections: (1) Ensemble for New Music, (2) The Madrigalists, (3) Collegium Musicum, (4) Women's Chorus, (5) vocal ensembles, (6) piano ensembles, (7) accompanying, (8) Percussion Ensemble, (9) Percussion Lab Ensemble, (10) woodwind ensembles, (11) brass ensembles, (12) chamber orchestra, (13) string ensembles, (14) guitar ensembles, (15) small jazz ensembles, (16) Jazz Orchestra I, (17) Jazz Orchestra II, (18) Jazz orchestra III, (19) Basketball Pep Band.

APM 393 Junior Project. No credit. Individual research project in the student's major field under the supervision of faculty.

APM 394 Junior Recital. No credit. Public presentation of a half-length recital.

APM 463-464/563-564 Pedagogy. Continuous course; 2 lecture hours. 2-2 credits. A study of the musical, physiological, and psychological aspects of teaching instruments or voice. Second semester will include practical experience in teaching students under faculty supervision. Sections: (1) piano, (2) voice, (3) organ, (4) percussion.

APM 485 Percussion Laboratory/Seminar. Semester course; 2 laboratory hours. 1 credit class. May be repeated up to four times for credit. Advanced course in specialized percussion techniques and literature designed for the performer, composer, and educator. Topics may include surveys of literature, notational problems, mallet making, and instrumental maintenance. Topics will vary from semester to semester depending on the needs and interests of the class.

APM 493 Senior Project. No credit. Individual research project in the student's major field under the supervision of faculty.

APM 494 Senior Recital. No credit. Public presentation of a full-length recital.

Courses in Music History, Literature and Theory

MHT 100/200 Special Offerings in Music. Flexible term course; variable; 1-3 credits. Course may be repeated. Semester or short-term course designed for non-music majors which deals with a variety of subjects in music. Subject matter will change from term to term and may involve lecture and/or laboratory. See the *Schedule of Classes* for specific offerings each semester.

MHT 105-106 Introduction to Writing Music. Continuous course; 3 lecture hours. 3-3 credits. Creating and harmonizing melodies, principles of notation, and elementary music theory. Second semester emphasis is on creative aspects. For non-music majors only.

MHT 110 Elements of Music. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of music notation, scale, and triad forms. Aural skill development will parallel the theoretical studies. Intended to prepare music majors for core curriculum study; no degree credit for music majors.

MHT 117 Computers in Music. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study and application of music software on mainframe and personal computers. The student will be expected to demonstrate competence in the high-level languages, PASCAL and BASIC. Projects will focus on programming for educators and composers.

MHT 120 Introduction to Musical Styles. Semester course; 1 lecture and 2 laboratory hours. 2 credits. A study of the major styles and forms of western music with emphasis on the development of active cognitive listening skills through guided listening to selected recorded music.

MHT 135-136/235-236/335 Integrated Theory I-V. Continuous course; 3 lecture hours. 3-3 credits. The first year is a study of diatonic harmony with emphasis on melodic structure, harmonization and analysis. The second year continues with the study of chromatic harmony, modulation, and an introduction to jazz theory and practice. The fifth semester is an introduction to twentieth-century harmony, melody and rhythm. Emphasis throughout is placed on current uses of technology within the discipline. Open to non-music majors by permission of department chair.

MHT 201 Acoustics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Recommended prerequisite: MAT 101. Physical properties of sound and wave mechanics applied to the study and analysis of music and musical instruments. Topics will include instrumental and vocal sound production and perception, timbral characteristics, and pitch theory.

MHT 220 Introduction to World Music. Semester course; 1 lecture hour. 1 credit. Prerequisite: MHT 120. Study of various non-European musical cultures and musical practices in terms of larger cultural and sociological issues beyond western traditions.

MHT 243 Music Appreciation. Semester course; 3 lecture hours. 3 credits. Not open to music majors. Designed to encourage understanding of music from selected periods. Development of active cognitive listening skills through guided listening to selected recorded music.

MHT 250/AAS 250 Introduction to African-American Music. Semester courses; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects, including their African roots and contemporary popular expression. Performance practices will be analyzed and active cognitive listening skills developed through guided listening to selected recordings.

MHT 280 Survey of Twentieth-Century American Popular Music. Semester course; 3 lecture hours. 3 credits. A stylistic and historical survey of representative styles and trends of American popular music, from the turn of the century to the present. Performance practices will be analyzed through selected recordings and live performances.

MHT 302 Late Romantic Harmony. Semester course; 3 lecture hours. 3 credits. A review of common practice harmony and a study of chromatic harmony in the nineteenth and twentieth centuries.

MHT 303, 304 Piano Literature. Semester courses; 2 lecture hours. 2,2 credits. A survey of stringed keyboard literature. Historical, formal, and stylistic considerations of the various periods and composers of keyboard music. Listening and reading assignments included.

MHT 306 Form and Analysis. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 335 or permission of instructor. An analytical study of musical forms and salient features of melody, harmony, rhythm, and timbre of late baroque, classical, romantic and twentieth-century compositions.

MHT 311 Jazz Arranging I. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 236 or permission of instructor. A study of the basic harmonic, melodic, notational, and orchestration techniques needed to draft a successful jazz arrangement. The final project will be to write an arrangement for a 12-piece jazz ensemble.

MHT 312 Jazz Arranging II. Semester course; 3 lecture hours. 3 credits. Prerequisite: MUC 311 or permission of instructor. Advanced harmonic, melodic, and orchestration techniques applied to writing for the small jazz ensemble, vocal group, and large jazz orchestra.

MHT 320 Music in Films. Semester course; 3 lecture hours. 3 credits. Significant film music from the 1930s to the present. The course will focus on techniques for listening and evaluation. Functional, social, technical, and aesthetic considerations of film music will be examined. Students will prepare a critical analysis of each of the films viewed in class based on their perceptions as listeners/viewers. Music reading ability not required.

MHT 321, 322, 323, 324 Music History I-IV. Semester courses; 2 lecture hours. 2, 2 credits. Prerequisite: MHT 120 or MHT 243. Study of Western music in a historical context from antiquity to the present, including jazz history. Semester courses divided into the following: antiquity to baroque era, classical to romantic, twentieth century, jazz history. MHT 322 and 323 are writing intensive.

MHT 336 Organ Literature and Design. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 201 or permission of instructor. A survey of organ music with correlating studies in the design and construction of pipe organs from 1500 to the present.

MHT 350/AAS 350 Studies in the Music of the African Continent and Diaspora. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: MHT 243, MHT/AAS 250 or permission of instructor. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the *Schedule of Classes* for specific offerings.

MHT 380 Survey of the Music Industry. Semester course; 3 lecture hours. 3 credits. Commercial aspects of the music industry. Topics include copyright, music production and technology, management, radio and television, live venues and recording.

MHT 392 and 492 Independent Study. Semester courses; variable; 1-6 credits per semester. Maximum total of six credits. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course.

MHT 401 Seminar in Music History. Semester course; 2 lecture hours. 2 credits. May be repeated for a maximum of six credits. Research and discussion of selected topics, in music history and literature.

MHT 407 Arranging Modern Popular Music. Semester course; 3 lecture hours. 3 credits. Adapting and scoring music for ensembles incorporating popular commercial performance styles.

MHT 411 Jazz Arranging III. Semester course; 3 lecture hours. 3 credits. Techniques of arranging for the contemporary pop medium. Availability contingent upon student demand and faculty resources.

MHT 412 Jazz Arranging IV. Semester course; 3 lecture hours. 3 credits. A study of the techniques used in modal, blues, and other forms of contemporary jazz composition. Availability contingent upon student demand and faculty resources.

MHT 413 Arranging. Semester course; 3 lecture hours. 3 credits. Practical, technical, and conceptual considerations of arranging and transcribing for vocal and instrumental groups will be explored. Students will demonstrate competence in these creative areas to the optimum level of school and/or church music organization.

MHT 431/RST 431 Hymnology. Semester course; 3 lecture hours. 3 credits. A study of hymns and hymn tunes with emphasis on their development, style, and functions. Offered alternate years.

MHT 434 Choral Literature. Semester course; 2 lecture hours. 2 credits. A survey of part-music for mature voices including both sacred and secular works. Primary emphasis will be on mixed-voice repertoire.

MHT 435/RST 435 Liturgics. Semester course; 3 lecture hours. 3 credits. A study of the forms of public worship emphasizing the orders in current usage. The planning of weekly and special services. Offered alternate years.

MHT 441 American Music. Semester course; 2 lecture hours. 2 credits. The growth and development of music in the United States from 1607 to the present. While the chief concentration will be upon art music and church music, folk music, jazz and the other forms of popular expression will be included.

MHT 442 Twentieth-Century Music. Semester course; 2 lecture hours. 2 credits. Impressionistic, expressionistic, neoclassic, and neoromantic influences and styles of music. Development of new sound-generating techniques and methods for ordering the new tonal materials.

MHT 450 Performance Practice. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Course may be repeated up to four times. A study of performance practices including ornamentation, instrumentation, and stylistic considerations. Topics and emphases will change from term to term.

MHT 451, 452 Orchestral Repertoire. Semester courses; 1 lecture hour or 1 lecture and 2 laboratory hours. 1 credit or 2 credits. Performance and study of selected major symphonic historical, analytical, and stylistic perspective. Research reports will include comparisons of interpretations. Repertoire will consist of basic audition pieces selected by orchestras. Laboratory sessions will utilize available instrumentation for performance.

MHT 465, 466 Song Literature. Semester courses; 2 lecture hours. 2, 2 credits. A survey of the vocal literature of Germany, France, England, and other countries. Students will perform material.

MHT 491 Topics in Music. Semester course; variable; 1-3 credits per semester. May be repeated for a maximum of nine credits. Flexible term courses in selected aspects of music performance, theory, literature, or history. See the *Schedule of Classes* for specific topics to be offered each semester.

Courses in Music Composition

MUC 111 MIDI Programming and Synthesis. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of MIDI (Musical Instrument Digital Interface) programming techniques as applied to synthesis and composition on electronic musical instruments.

MUC 112 Synthesizer and Composition. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MUC 111 or permission of instructor. An in-depth use of the MIDI (Musical Instrument Digital Interface) synthesizer as an instrument for performance and composition. Projects will involve utilization of the computer in conjunction with synthesizers.

MUC 201 Class Composition I. Semester course; 2 lecture hours. 2 credits. Prerequisites: APM 166, MHT 136, and permission of instructor. Open to all music majors and required of potential composition majors; the emphasis of this class will be on simple rhythmic and melodic studies.

MUC 202 Class Composition II. Semester course; 2 lecture hours. 2 credits. Prerequisite: MUC 201 or permission of instructor. An extension of Class Composition I and an introduction to two-part vocal and instrumental writing, improvisational studies, and modal and synthetic scales. The emphasis throughout will be on original composition. Availability contingent upon student demand and faculty resources.

MUC 311 Introduction to Digital Synthesis. Semester course; 3 lecture hours. 3 credits. Prerequisites: MUC 112, MHT 117, and CDE 331 or permission of instructor. A study and application of digital sampling and sound modification for the production of multitrack recordings. Availability contingent upon student demand and faculty resources.

MUC 312 Digital Synthesis. Semester course; 3 lecture hours. 3 credits. Prerequisite: MUC 311 or permission of instructor. A study and application of digital synthesis and advanced techniques in sound mod-

ification through computer control. Availability contingent upon student demand and faculty resources.

MUC 315 Counterpoint I. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 236. This class concentrates on two-part writing, canons, species, exercises, short two-voiced pieces, and inventions.

MUC 316 Counterpoint II. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 236. Three- and four-part writing forms based on the chorale; contrapuntal variation forms, and fugue will be studied. Availability contingent upon student demand and faculty resources.

MUC 405 Twentieth-Century Techniques. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 236 or permission of instructor. Composition in and analysis of techniques associated with late Romanticism, Impressionism, Neo-Classicism, Expressionism, Serialism, and current *avant-garde* music. No degree credit for graduate composition majors.

MUC 406 Orchestration. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 236. Application of idiomatic scoring devices for orchestral instruments and voices in both large and small combinations. No degree credit for graduate composition majors.

MUC 425, 426 Projects in Electronic Music. Semester courses; 4-12 laboratory hours. 2-6 credits. Each course may be repeated for a maximum of 12 credits. Prerequisite: Permission of instructor. Completion of selected projects in electronic module design and/or electronic music composition.

MUC 450 Composition Seminar. Semester course; 1 lecture hour. 1 credit. May be repeated for a maximum of four credits. A forum for performance, discussion, and critical evaluation of student compositions.

Courses in Music Education

Upper-division undergraduate students may enroll in the following graduate courses with permission: MUE 595 and MUE 597. See the *Graduate Bulletin* for course descriptions.

MUE 281 Basic Music Skills. Semester course; 3 lecture hours. 3 credits. Development of basic creative and performance competencies for instructional purposes and the integration of music with other subject areas. Not open to music majors.

MUE 290 Music in General Education. Semester course; 1 lecture and 2 laboratory hours. 2 credits. The role of music in general educational curricula with emphasis on trends in music education, philosophy, learning theories as they apply to music, concepts of curriculum and music in the educational environment. Laboratory hours will involve observations of selected school environments.

MUE 331 Multiple Choir Program. Semester course; 3 lecture hours. 3 credits. The organization of multi-choir programs in the church; children's choir methods and materials; handbell choirs. Offered alternate years.

MUE 383 Observation in Music Education. Semester course; 2 laboratory hours. 1 credit. Prerequisite: MUE 290. Observations and field experiences in public/private schools and in class discussion and analysis of observed techniques and procedures.

MUE 391 Processes of Music Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: MUE 290. Study of current methods and materials of music in education. Orff, Dalcroze, Kodaly, Manhattanville, and other modern music education systems will be discussed, observed, and demonstrated.

MUE 392 Conducting and Rehearsal Techniques. Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Prerequisite: APM 381 and MUE 290 or permission of instructor. Development of enhanced conducting and rehearsal skills for school instrumental or choral groups. Emphasis on developing conducting technique, pacing, selecting and arranging appropriate materials and age appropriate musical goals.

MUE 479 Music Instrument Repair. Semester course; 2 laboratory hours. 1 credit. A study of problems related to intonation and tone quality in band and orchestra instruments; the relationship of mouthpieces and reeds to intonation; emphasis on acquiring knowledge and skill in the care and repair of music instruments.

MUE 483 Special Workshop in Music Education. Semester course; 0.5-3 credits. Flexible term courses on selected aspects of music education. See the *Schedule of Classes* for specific offerings each term.

Department of Painting and Printmaking

Ruth M. Bolduan

Associate Professor and Acting Chair (1988) BA 1969 and MFA 1980 American University

DeSmidt, Thomas H. (1971) *Professor and Associate Dean, School of the Arts* AA Lincoln College; BFA Layton School of Art; MFA 1970 Syracuse University

Donato, Gerald M. (1967) *Professor* BS and MA Northern Illinois University; MFA 1967 University of Wisconsin

Drought, Michael H. (1975) *Associate Professor* BS and MFA 1973 University of Wisconsin, Madison

Freed, David C. (1966) *Professor* BFA Miami University, Ohio; MFA 1962 University of Iowa

Gower, Ann Renee (1981) *Associate Professor* BS University of Wisconsin; MA 1978 University of Minnesota; MFA 1981 Syracuse University

Miller, James B. (1971) *Professor* Dip. AD Leeds College of Art; MFA 1971 University of Arkansas

Tapia, Javier (1988) *Associate Professor* BFA and MFA 1987 University of Texas, Austin

Tisserat, Barbara C. (1978) *Associate Professor* BFA Colorado State University; MFA 1977 University of Wisconsin, Madison

Wetton, Philip S. (1969) *Professor* Dip. AD Coventry College of Art; MFA 1967 Brighton College of Art

Yarowsky, Morris (1969) *Professor* AB Dartmouth College; MFA 1962 California College of Arts and Crafts

Emeriti Faculty

Bumgardner, James A. *Professor Emeritus* BFA Virginia Commonwealth University

Campbell, B. Jewett *Professor Emerita* New York Art Students' League (three years); Skowhegan School of Painting and Sculpture (two summers); Hans Hoffman School of Art (two summers)

Kevorkian, Richard E. *Professor Emeritus* BFA Virginia Commonwealth University; Summer Session Pennsylvania Academy of Arts and Crafts

Martin, Bernard M. *Professor Emeritus* BFA Virginia Commonwealth University; MA Hunter College

Russell, Milo F. *Professor Emeritus* BFA Virginia Commonwealth University; MA University of Virginia

The Department of Painting and Printmaking supplies a solid foundation for the creative person who wants to become a professional painter or printmaker.

As the students progress, they are given increasing freedom. As they demonstrate their acquisition of skill and insight, they are encouraged to explore all areas of their creative work more individually. During their junior and senior years, most students concentrate in either painting or printmaking.

Degree Requirements in Painting and Printmaking

	<i>Credits</i>
Studios	
Foundation Program	16
Sculpture or Crafts	4
Sculpture	4
Painting	16
Drawing	12

Printmaking	12
Senior Seminar	2
General Studies	
English 101,200	6
Literature	6
Introduction to the Arts	2
Art History	17
Approved electives to include three credits in the social/behavioral sciences and three credits in the natural sciences/mathematics	12
Open Electives	11
Painting and Printmaking Electives	10
	130

Minor in Painting and Printmaking

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in painting and printmaking courses. Of these 18, at least nine credits must be in upper-level courses.

Courses in Painting and Printmaking

The following graduate courses may be taken by undergraduates for degree credit: PAP 525 and PAP 527, 528. See the *Graduate Bulletin* for course descriptions.

PAP 155, 156 Drawing and Painting, Basic. Semester courses; 3 studio hours. 1, 1 credit. Introduction to painting with emphasis on learning basic techniques. Discussion of materials and their use. Models, both nude and clothed, are used.

PAP 203,204 Painting and Design, Basic. Semester courses; 9 studio hours. 3,3 credits. Painting and structure are discussed in terms of space, form, and content. Work may be carried on out-of-doors or indoors. (Summer school offering only.)

PAP 205 Painting, Basic Composition. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. An introduction to the use of paints with an emphasis on the organization of the artistic image, through the use of plastic form and color, coupled with analysis of historical and contemporary work.

PAP 207 Painting Techniques. Semester course; 2 lecture and 6 studio hours. 4 credits. An investigation of pigments, glazes, underpainting, mixed media, materials, and other studio techniques.

PAP 209 Materials: Printmaking. Semester course; 2 lecture and 6 studio hours. 4 credits. An introduction to three principal printmaking techniques: etching, lithography, and screenprinting.

PAP 214 Printmaking, Basic. Semester course; 1 lecture and 6 studio hours. 3 credits. Fundamentals of printmaking Introduction of basic problems of techniques and composition. (Summer school offering only.)

PAP 221 Drawing, Basic. Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of six credits. Drawing instruction with attention to extension of the student's knowledge of the tools of drawing. Materials and techniques will be related to pictorial organization.

PAP 223, 224 Drawing, Basic. Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Course introducing drawing fundamentals and spatial relationships. Concern is given to materials and the development of the students' visual perceptions. (Summer school offering only.)

PAP 255-256 Drawing and Painting, Basic. Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Development of basic skills; exploring structure, color, form, and image. Students will be exposed to class critiques as a means of analyzing their creative works.

PAP 303, 304 Painting, Intermediate. Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Prerequisite: Three credits of basic painting or permission of instructor. Primary emphasis on the development of

an individual direction in the context of contemporary ideas and images in painting. (Summer school offering only.)

PAP 305 Painting, Intermediate. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: Four credits of basic painting or permission of instructor. Primary emphasis on the development of an individual direction in the context of contemporary ideas and images in painting.

PAP 312 Printmaking, Intermediate (Lithography). Semester course; 9 studio hours. 3 credits. Prerequisite: 3 credits of basic printmaking or permission of instructor. Investigation of techniques and technical printing problems. Stones and plates are used. (Summer school offering only.)

PAP 313 Printmaking, Intermediate (Etching). Semester course; 9 studio hours. 3 credits. Prerequisite: 3 credits of basic printmaking or permission of instructor. Techniques and technical problems in the printmaking area are investigated. (Summer school offering only.)

PAP 314 Printmaking, Intermediate (Screenprinting). Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: Basic or beginning printmaking. Investigation of techniques and technical problems in the printmaking area. (Summer school offering only.)

PAP 315 Printmaking, Intermediate (Etching). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAP 209 or permission of instructor. Investigation of etching printmaking, drypoint, engraving, aquatint, soft grounds, and related techniques.

PAP 317 Printmaking, Intermediate (Lithography). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAP 209 or permission of instructor. Investigation of techniques and technical printing problems in lithographic printing process from stones and plates.

PAP 319 Printmaking, Intermediate (Screenprinting). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAP 209 or permission of instructor. An investigation of cut, hand-drawn, and photographic stencil techniques and printing on a variety of surfaces.

PAP 321 Drawing, Intermediate. Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: 3 credits of basic drawing or permission of instructor. Drawing for advanced students with special emphasis on creative response to the drawing as a work of art.

PAP 324 Drawing, Intermediate. Semester course; 9 studio hours. 3 credits. Prerequisite: 3 credits of basic drawing or permission of instructor. Drawing for intermediate students with emphasis on problematic thinking and dealing with drawing as an aesthetic form. (Summer school offering only.)

PAP 326 Color. Semester course; 3 lecture hours. 3 credits. A course examining the concepts governing the use of color. Historical and contemporary concepts and methods of application will be explored.

PAP 329 Life Drawing. Semester course; 6 studio hours. 3 credits. May be repeated for a maximum of nine credits. Prerequisite: Foundation drawing. Explores the structural and muscular systems of the human body with emphasis upon proportional relationships, chiaroscuro, contour, volume, and foreshortening.

PAP 355, 356 Drawing and Painting, Intermediate. Semester course; 9 studio hours. 3, 3 credits. Prerequisite: Three credits of basic drawing or painting or permission of instructor. Intermediate instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

PAP 403, 404 Painting, Advanced. Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Prerequisite: Three credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in the senior student a highly professional approach and achievement in his/her work. Individual as well as group discussions. (summer school offering only.)

PAP 405 Painting, Advanced. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of twenty credits. Prerequisite: Four credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in senior students a highly professional approach and achievement in their work. Individual as well as group discussions.

PAP 412 Printmaking, Advanced (Lithography). Semester course; 9 studio hours. 3 credits. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Specialization in one medium. Aesthetic suitability of the design to a particular medium is emphasized. (Summer school offering only.)

PAP 413 Printmaking, Advanced (Etching). Semester course; 9 studio hours. 3 credits. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Concentration on one medium with emphasis on creative techniques. (Summer school offering only.)

PAP 414 Printmaking, Advanced (Screenprinting). Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Cut, hand-drawn, and photographic stencil techniques are explored. Printing will be done on a variety of surfaces. (Summer school offering only.)

PAP 415 Printmaking, Advanced (Etching). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of twenty credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Specialization in one medium with emphasis upon technical research and aesthetic suitability of the design to the particular medium used.

PAP 417 Printmaking, Advanced (Lithography). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of twenty credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Further investigation of techniques and technical printing problems in the lithographic printing process from stones and plates.

PAP 419 Printmaking, Advanced (Screenprinting). Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of twenty credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Further exploration of cut, hand-drawn, and photographic stencil techniques and printing on a variety of surfaces.

PAP 421 Drawing, Advanced. Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of fifteen credits. Prerequisite: Three credits of intermediate drawing or permission of instructor. A studio for drawing with individual criticism. Special attention is given to contemporary concepts.

PAP 423 Experimental Printmaking. Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Relief printing, collographs, monoprints, photoengraving, and mixed media will be investigated.

PAP 424 Drawing, Advanced. Semester course; 9 studio hours. 3 credits. Prerequisite: Three credits of intermediate drawing or permission of instructor. A studio drawing course set up with individual criticism dealing with contemporary concepts. (Summer school offering only.)

PAP 448-449 Mural Painting. Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Prerequisite: Permission of instructor. An investigation of the concepts and procedures involved in mural painting. The class will execute at least two murals during the year.

PAP 455-456 Drawing and Painting, Advanced. Continuous course; 9 studio hours. 3-3 credits. Prerequisite: Three credits of intermediate drawing or painting or permission of instructor. Advanced instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

PAP 490 Senior Seminar. Semester course; 3 lecture hours. 2 credits. Writing intensive. Information to help graduating seniors in the Department of Painting and Printmaking meet the professional

requirements involved in exhibiting and promoting their creative work and in functioning as an artist.

PAP 491 Topics in Painting and Printmaking. Semester course; 1-4 credits. May be repeated with different topics for a maximum of twelve credits. Topical course focusing on creative expression and research in the areas of painting and printmaking. See the *Schedule of Classes* for specific topics to be offered.

Department of Photography and Film

Dale L. Quarterman

Professor and Acting Chair (1969) BFA University of Georgia; MS 1972 Illinois Institute of Technology

Bremer, David M. (1972) *Associate Professor* BFA and MA 1972 Ohio University

Heroy, John N. (1971) *Associate Professor* BFA Rochester Institute of Technology; MFA 1973 State University of New York

Strommer, Joan E. (1979) *Associate Professor* BFA and MFA 1975 University of Minnesota

Emeriti Faculty

Lensen-Tomasson, Nancy *Associate Professor Emerita* BA Wellesley College; MA and MFA University of New Mexico

Nan, George D. *Professor Emeritus* BFA Rochester Institute of Technology; MS Illinois Institute of Technology

The Department of Photography and Film contributes to both the School of the Arts and the University as a whole. The department offers basic and intermediate courses in black and white photography, in color photography for those who already have two years of course work or a sound photographic background, and advanced black and white and color workshops.

Beginning courses cover fundamentals and techniques and develop the visual senses. Advanced courses expand on the student's knowledge of the visual senses and help the student put together a well-developed portfolio.

On the intermediate and advanced levels, the department offers a limited number of classes in Super 8 and 16mm filmmaking techniques. No undergraduate degree is offered in photography or film.

Minor in Photography and Film

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in photography and film courses. Of these 18, at least nine credits must be in upper-level courses.

Courses in Photography and Film

PTY 233 Media Arts Survey. Semester course; 3 lecture and 3 studio hours. 4 credits. A survey of the artistic and communication uses of media in contemporary society. Cinematography, video, and computer graphics technology will be introduced.

PTY 243-244 Photography. Continuous course; 1-2 lecture and 3 studio hours. 2-3 credits. PTY 243 is prerequisite to 244. Study of fundamental camera techniques and basic photographic processes in relation to visual communication. An emphasis will be placed on photography's expressive possibilities. Adjustable camera required.

PTY 245 Design Photography I. Semester course; 2 lecture and 3 studio hours. 3 credits. A comprehensive beginning class covering an introduction to the camera, the process of exposure, developing, and black and white printmaking. The emphasis is on proper procedures in the darkroom, as well as providing an introduction to the photographic

and visual concepts, critiques, and experience with shooting a variety of subjects. For communication art and design majors only or permission of instructor.

PTY 301 Mass Communications Photography. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study of fundamentals of photography and techniques of camera use in relation to the fields of journalism and visual communications. Adjustable camera required. Offered for mass communications majors only.

PTY 305-306 The Zone System. Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Prerequisites: PTY 345 or 350. Lectures deal with the testing of camera, lens, film, and printing methods to allow the student to previsualize images made in the camera. Application of principles will be evaluated in the studio and laboratory allowing the students to test photographic equipment. Emphasis is placed upon the individual investigation of these concepts.

PTY 307 Photographic Processes and Techniques. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: PTY 245 or 301. An in-depth and concentrated exploration of various photographic techniques. Emphasis is placed upon image creation and processing.

PTY 309 View Camera Operations and Processing. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: PTY 245 or 301. A course exploring and using the view camera for optimum photographic results. Emphasis is on understanding how the camera functions and learning processing techniques associated with the medium.

PTY 341, 342 Concepts in Photography. Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. Prerequisites: PTY 345, 350 or permission of instructor. A course that affords the student the opportunity to develop a personal approach to the photographic medium. Twentieth-century concepts presented in the course include documentary style, the street photography aesthetic, the photograph as a metaphor and postmodernism. Adjustable camera required.

PTY 345 Design Photography II. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: 245. Class problems in advanced photographic techniques: lectures, demonstrations, and assignments introduce the student to relevant photographic materials, studio lighting, serial imagery, print lay out, and minimalism. Emphasis is placed on individual solutions to photographic design problems. Students work with both black and white and color transparency materials. Course restricted to arts majors.

PTY 348 Underwater Photography. Semester course; 1 lecture and 3 studio hours. 2 credits. Prerequisite: Valid Basic Scuba Certification Card. (Tanks, regulators, underwater camera, and weights will be supplied.) Basic photography principles, selection and care of equipment, and how to make underwater photographs. Basic scuba equipment (mask, fins, snorkel, B vest) required.

PTY 350 Intermediate Photography. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: PTY 243-244 or 301 or permission of instructor. Expanding photographic knowledge through lectures that examine contemporary and historical ideas to encourage the development of photographic style. Emphasis is placed upon refinement of technical processes, and expanded use of photographic materials to produce exhibition quality black and white photographs.

PTY 351 Portrait Photography. Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PTY 345 Design Photography or PTY 350 Intermediate Photography. Exploring the various visual possibilities of the use of portrait photography. Adjustable camera required.

PTY 371, 372 Cinematography. Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. The production of motion picture films with emphasis on fundamental shots and transitional elements. Students usually work with 16mm film and equipment.

PTY 373 16mm Camera Systems. Semester course; 2 lecture hours. 2 credits. Study of 16mm camera systems used for motion picture photography.

PTY 374 Film Preproduction and Postproduction. Semester course; 2 lecture hours. 2 credits. An overview of techniques in planning and producing an independent film.

PTY 375 Filmmaking I. Semester course; 3 lecture and 3 studio hours. 4 credits. Techniques for production of silent films. Not open to CDE majors.

PTY 376 Filmmaking II. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: PTY 375 or PTY 233. Emphasis on technical aspects of film production.

PTY 377 The Film Image. Semester course; 3 lecture hours. 3 credits. An examination of production techniques and problems encountered by the filmmaker in creating the motion picture image. A selected number of entertainment films, documentaries, topical films, and others will be viewed as source material and will be dealt with from a production point of view.

PTY 392-393 Film Animation. Continuous course; 3 lecture and 3 studio hours. 4-4 credits. Techniques for the production of short, animated films.

PTY 441, 442 Studio Photography. Semester courses; 3 lecture and 3 studio hours. 4.4 credits. Prerequisites: PTY 341, 350, 309 or permission of instructor. A course that explores various studio applications of photography through the utilization of tungsten and strobe lighting. Lectures and studio assignments will explore table top still life, food photography, studio portraiture, and architectural photography. Assignments will be produced in black and white and color. Professional standards are stressed.

PTY 445 Color Photography. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: PTY 341, 342, 350 or permission of instructor. A course that stresses technical proficiency and aesthetic awareness of the creative uses of color photography. Emphasis is placed on negative- to positive-printing through the exploration of films, papers, and processes. Lectures relating to historical development, color theory, composition, color perception, and professional application are an integral part of this course. May be repeated for maximum of 8 credits.

PTY 475-476 Filmmaking Workshop. Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Prerequisite: Permission of instructor. The production of a motion picture to be directed by faculty with the assistance of students in the various production crew roles.

PTY 481 Filmmaking III. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisite: PTY 376. Techniques for production of sound motion pictures.

PTY 482 Filmmaking IV. Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: PTY 481 and permission of instructor. Advanced projects in film production.

PTY 490-491 Motion Picture Special Effects. Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Prerequisite: PTY 376 or permission of instructor. An exploration of special effects for film production which may be created both in the camera and with a printer.

PTY 500 Photographic Studio and Seminar. Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: Permission of instructor. Experimentation in the studio with both silver and nonsilver processes for creating the photographic image, leading to producing a cohesive body of work. The seminar examines the technical and aesthetic components of these processes and the language and theories of photographic criticism.

Department of Sculpture

Joseph H. Seipel

Associate Professor and Chair (1974) BS 1970 University of Wisconsin; MFA 1973 Maryland Institute College of Art, Rinehart School of Sculpture

Helfgott, Myron (1968) *Professor* BA and MFA 1964 Southern Illinois University

Henry, Charles R. (1968) *Professor* BFA 1965 Cleveland Institute of Art; MFA 1968 Cranbrook Academy of Art

King, Elizabeth C. (1985) *Associate Professor* BFA 1972 and MFA 1973 San Francisco Art Institute

Lieberman, Claire

Newton, Carlton R. (1987) *Assistant Professor* BFA 1972 and MFA 1978 San Francisco Art Institute

Van Winkle, Lester G. (1969) *Professor* BS East Texas State University; MA 1969 University of Kentucky

Emeriti Faculty

North, Harold E. *Professor Emeritus* BFA Rhode Island School of Design; MFA Virginia Commonwealth University

The Department of Sculpture's mission is to create an environment of high expectation regarding self-motivation, intellectual capacity, and responsibility, in order to establish those conditions that promote the student's ability to construct a thinking self. Our students explore technology's parameters, and discover applications to new and traditional modes of expression. By encouraging our students to take a wide range of courses within the University, we continue to stress the links between art, science, the humanities, and the conditions of the world. Our goal is to provide students with the seeds of discernment, vocabulary, and skills of analysis and synthesis to become participants in the dialogue of our age.

Within this context, students strive to measure up to the best performances modeled for them by their peers and by faculty who engage in vital research.

Degree Requirements in Sculpture

	<i>Credits</i>
Studios	
Foundation Program	16
Sculpture	40
Painting and Printmaking	14
General Studies	
Introduction to the Arts	2
Art History	14
English 101,200	6
Literature 6	6
Approved Electives to include three credits in social sciences, three credits in mathematics, and four credits in laboratory science	10
Open Electives	22
	130

Minor in Sculpture

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in sculpture. Of these 18, at least nine credits must be in upper-level courses.

Courses in Sculpture

SCU 209, 210 Introduction to Sculpture. Semester courses; 2 lecture and 3 studio hours. 3,3 credits. The course will offer an opportunity for students to work with some of the ideas and materials of sculpture through slides, lecture, and studio involvement.

SCU 211, 212 Sculpture. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. The primary goal of this course is the effective expression of ideas. The student is introduced to the basic tools, materials, and techniques with attention given to problem solving.

SCU 217, 218 Sculptural Concepts. Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. Prerequisite: Permission of instructor. A study of contemporary technology, philosophy, criticism, and their relation to material resources and technical practices.

SCU 311, 312 Sculpture. Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of eight credits. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

SCU 313, 314/413, 414 Dimensional Concepts. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

SCU 411, 412 Sculpture. Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of sixteen credits. The majority of the student's activities occur in his own studio with emphasis on the development of a personal style.

SCU 417 Seminar in Contemporary Sculpture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. A forum for consideration and discussion of recent developments.

SCU 419 Professional Studio Practicum. Semester course; 9 studio hours. 3 credits. May be repeated. Prerequisite: Permission of chair. A studio class that provides a continuation of the student's work in sculpture. This course will be recorded as an elective for a sculpture major.

SCU 491 Topics in Sculpture. Semester course; 1-4 credits. May be repeated for a maximum of sixteen credits. Prerequisite: Permission of instructor. Writing intensive. A seminar or workshop on a selected issue or topic in the field of sculpture. See the *Schedule of Classes* for specific topic(s) to be offered each semester.

SCU 500, 600 Graduate Sculpture. Semester course; 4, 8, or 12 studio hours. 2, 4, or 6 credits. May be repeated. Emphasis on individual creative production with periodic exposure of student's work and ideas to the critical attention of the teaching faculty of the Department of Sculpture and other graduate students.

SCU 517 Seminar in Contemporary Sculpture. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. A forum for consideration and discussion of recent developments in the field.

SCU 590 Graduate Seminar. Semester course; 1 or 4 lecture hours. 1 or 4 credits. May be repeated. Degree requirement for graduate students in the Department of Sculpture. Weekly seminar for the purpose of exploring recent developments in sculpture and conducting critiques in which students can discuss the ideas and attitudes manifest in their work.

SCU 591 Topics in Sculpture. Semester course; variable; 1-4 credits. May be repeated for a maximum of twelve credits. This course will explore selected topics of current interests or needs relative to sculpture. See *Schedule of Classes* for specific topics to be offered each semester.

Department of Theatre

David S. Leong

Professor and Chair (1996) BA 1973 University of New Hampshire; MFA 1975 University of North Carolina, Greensboro

Black, George W. (1994) *Professor* AB 1957 Spring Hill College; MA 1963 Tulane University; PhD 1970 University of Georgia
 Campbell, Kenneth (1970) *Professor* VMA Catholic University of America; MA University of Glasgow; PhD 1965 University of Denver
 Erickson, Maurice L. (1970) *Associate Professor* BS Dickinson State College; MFA 1970 Ohio University
 Hopper, Elizabeth A. (1974) *Associate Professor* BA University of Evansville; MFA 1968 University of Wisconsin, Madison
 Hopper, Gary C. (1976) *Associate Professor* BS and MA University of Wisconsin; MFA 1972 Boston University
 Keller, Ronald E. (1984) *Associate Professor* BA 1978 University of Northern Iowa; MFA 1984 University of Massachusetts

Parker, James W. (1977) *Professor* BA Longwood College; MA University of Virginia; PhD 1974 City University of New York
 Rodgers, Janet B. (1987) *Associate Professor* AB 1969 Mount Holyoke College; MFA 1975 Brandeis University
 Szari, Louis J. (1979) *Associate Professor* BS 1970 and MA 1972 Kent State University; MFA 1976 University of Texas

Emeriti Faculty

Newdick, Richard L. *Professor Emeritus* BA University of Maine; MA University of North Carolina

The Department of Theatre provides students with the professional and cultural foundations essential for achieving the highest standards of the art. Applicants are admitted based on demonstration of ability, genuine interest determined during an interview, and audition and/or portfolio presentation.

The department offers two BFA degrees: one in theatre with emphasis on either performance or design/technical; the other in theatre education which leads to the certification required for teaching theatre, speech, and English in the public schools.

Because of the environment that exists in these pre-professional programs, all aspects of theatre – as art, craft, business, and education – are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body, and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher training activities that lead to certification.

The department also serves students throughout the University with offerings in speech communication.

Master of Fine Arts in Theatre

The Department of Theatre offers the Master of Fine Arts degree in two advanced degree options, the professional studio and theatre education. Studio degrees are offered in acting, directing, scene design, and costume design. In collaboration with its professional affiliate, Theatre Virginia, a constituent member of the League of Professional Theatres, Theatre VCU develops skills which allow students to directly enter the profession upon completion of the degree program. The Theatre Education program prepares the theatre educator to enter the academic theatre profession. The degree tracks each require 60 credit hours and three years to complete. See the *Graduate Bulletin* for a more detailed description of this program.

Degree Requirements in Theatre

	<i>Credits</i>
Performance Emphasis	
Acting	24
Voice	12
Movement	8
Theatre Design and Crafts	14
General Studies	
English 101,200	6
Literature	12
Arts History	12
Approved Electives to include three credits in social sciences and four credits in laboratory sciences and three credits in mathematics	10

Effective Speech	3
Open Electives	29
	<hr/>
	130

Fourth Year		
ENG Shakespeare	3	
HED 480 Safety, First Aid, and CPR		3
Electives**	12	11
	<hr/>	<hr/>
	15	14

Design/Technical Emphasis

Art Foundation	8
Acting	6
Theatre Design and Crafts	20
Design/Tech Electives	36
General Studies	
English 101, 200	6
Speech 121	3
Literature	15
Art History	12
Approved Electives to include three credits in social sciences, four credits in laboratory sciences and credits in laboratory sciences and three credits in mathematics	10
Open Electives	14
	<hr/>
	130

* Under the new General Education requirements, unless a student has scored at least 550 on SAT's or has earned a "B" or higher in high school Algebra II or Geometry, the student will be required to successfully complete a math class. A student who meets this requirement will select an elective to fulfill 3 credits.

All stage management students are required to work on Theatre VCU productions. This requirement gives them the opportunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Electives are to be decided with the student's faculty adviser. The Equity Stage Managers suggest classes in Voice and Dialects, Stage Movement, Stage Combat and Weapons Safety, Advanced Design, Computer Technology, Technical Drawing and Drafting, Personal Management, and Film Production.

** Students may be asked to act as Assistant Stage Manager for a graduate Stage Manager or to work as a Stage Manager under a faculty Director during Theatre VCU's season. These credits may be taken as R&P or electives.

Students, in consultation with their adviser, also may elect to have one semester of their senior year as a professional internship at an approved theatre.

Theatre Education

Acting	6
Voice/Speech	9
Movement	4
Theatre Design and Crafts	15
Directing/Practicum in Theatre	6
General Studies	
English	12
Literature	24
Arts History	6
Social Science	12
Math/Science	11
Professional Education/Health	30
	<hr/>
	135

Scene Design/Technical Production

	<i>Fall Sem.</i>	<i>Spring Sem.</i>
First Year		
THE 103/104 Stagecraft/Costume Construction	3	3
THE 113/114 Acting I	3	3
AFO Drawing Class/Color Theory	2	2
THE 211-212 Introduction to Drama	3	3
ENG 101/SPE 121 Composition and Rhetoric/ Effective Speech	3	3
Natural Science and Laboratory	4	
Social/Behavioral Science		3
	<hr/>	<hr/>
	18	17

Stage Management/Technical Production

	<i>Fall Sem.</i>	<i>Spring Sem.</i>
First Year		
THE 103/104 Stagecraft/Costume Construction	3	3
THE 113/114 Acting I	3	3
THE 211-212 Introduction to Drama	3	3
ENG 101/SPE 121 Composition and Rhetoric/ Effective Speech	3	3
Natural Science and Lab	4	
Social/Behavioral Science		3
AFO 121/122 or 109 Drawing	2	2
	<hr/>	<hr/>
	18	17
Second Year		
ARH 103 or 104 Art History or Non-Western Art History	3	3
ENG 200 Composition and Rhetoric		3
Math Elective*	3	
THE 221 Basic Scene Design and Lab	4	
THE 227/228 Basic Stage Costuming and Make-up and Laboratories	4	4
THE 229 Basic Stage Lighting and Lab		4
MUST 191-192 Music	1	1
BUS 203 Accounting	3	
Electives		3
	<hr/>	<hr/>
	18	18
Third Year		
THE 403-404 History of Dramatic Literature or THE 423-424 Modern Drama	3	3
THE 307-308 History of the Theatre	3	3
THE 361-362 Directing	3	3
THE 325 Stage Management		3
BUS 161,162,163 Computers/Word Processing	3	
Electives	3	3
	<hr/>	<hr/>
	15	15

Second Year

ARH 103 or 104 Art History or Non-Western Art History	3	3
ENG 200 Composition and Rhetoric II		3
THE 221 Basic Scene Design and Laboratory	4	
THE 229 Basic Lighting Design and Laboratory		4
AFO Two Drawing Classes	2	2
Theatre Practicum	6	6
Math elective*	3	
	<hr/>	<hr/>
	18	18

Third Year

THE 227-228 Basic Stage Costuming and Make-up	3	3
THE 307-308 History of Theatre	3	3
THE 403-404 or 423-424 History or Dramatic Literature or Modern Drama	3	3
Design Electives	6	6
	<hr/>	<hr/>
	15	15

Fourth Year**

ENG Shakespeare	3	
Design Electives	6	9
Electives	5	6
	<hr/>	<hr/>
	14	15

* Under the new General Education requirements, unless a student has scored at least 550 on SAT's or has earned a "B" or higher in high school Algebra II or Geometry, the student will be required to successfully complete a math course. A student who meets this requirement will select an elective to fulfill three credits.

Practicums consist of working in the Scene Shop under the supervision of the Technical Director during the second and third years. This may be accompanied by morning teaching sessions in the skills required. All Scenic Design Majors are required to work in the Scene Shop on the shows produced by Theatre VCU. This gives them the opportunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Design electives are to be decided with your faculty adviser. They may include the following classes: Scene Design 305-306; Scene Design 505-506; Scene Painting 508; Costume Design 321-322; Stage Management; Advanced Lighting; Technical Drawing; or Advanced Scenic Techniques. Design electives also may consist of classes in other departments of the School of the Arts such as sculpture, furniture construction, jewelry, architecture and interior design.

** Students may be asked to act as a design assistant for a faculty designer or to design one aspect of one of Theatre VCU's seasons. This may be taken as a Senior Seminar or as a design elective. Students, in consultation with their adviser, also may elect to have one semester of their senior year as a professional internship at an approved theatre.

Costume Design/Technical Production

	<i>Fall Sem.</i>	<i>Spring Sem.</i>
First Year		
THE 103/104 Stagecraft/Costume Construction	3	3
THE 113-114 Acting I	3	3
AFO Drawing/Color Theory	2	2
THE 211-212 Introduction to Drama	3	3
ENG 101/SPE 121 Composition and Rhetoric/ Effective Speech	3	3
Natural Science and Laboratory	4	
Social/Behavioral Science		3
	18	17
Second Year		
ARH 103 or 104 Art History	3	
ENG200 Composition and Rhetoric II		3
THE 227-228 and L227 and L228 Basic Stage Costuming and Make-up and Laboratory	4	4
THE 309-310 History of Costume	3	3
AFO Two Drawing Courses	2	2
FDE 205-206 or FDE 215-216 Patternmaking or Draping	2	2
Electives	3	3
	17	17
Third Year		
THE 307-308 History of Theatre	3	3
THE 221 Basic Scene Design	3	
THE229 Basic Lighting Design		3
THE403-404 or THE 423-424 History of Dramatic Literature or Modern Drama	3	3
Non-Western Art History	3	
Design Electives	5	6
	17	15
Fourth Year**		
ENG Shakespeare	3	
Design Electives	6	9
Electives	2	6
Math Elective*	3	
	14	15

* Under the new General Education requirements, unless a student has scored at least 550 on SAT's or has earned a "B" or higher in high school Algebra II or Geometry, the student will be required to successfully complete a math class. A student who meets this requirement will select an elective to fulfill 3 credits.

All Costume majors are required to work in the Scene Shop on the shows produced by Theatre VCU. This gives them the oppor-

tunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Design electives are to be decided with the student's faculty adviser. They may include the following classes: Research Techniques for Costume Design 321-322; Advanced Costume Design 421-422; Scene Design 305-306; Scene Painting; and Advanced Scenic Techniques. Design electives also may consist of classes in other departments of the School of the Arts, such as Draping, History of Twentieth-Century Fashion, Textiles, Jewelry Making, Fashion Drawing, Figure Drawing, or Tailoring.

** Students may be asked to act as a design assistant for a faculty designer or to design one aspect of one of Theatre VCU's seasons. This may be taken as a Senior Seminar or as a design elective. Students, in consultation with their adviser, also may elect to have one semester of their senior year as a professional internship at an approved theatre.

Courses in Speech

SPE 103 Voice and Diction. Semester course; 1 lecture hour. 1 credit. Principles and techniques of effective production of the speaking voice and articulation of the sounds of American English.

SPE 121 Effective Speech. Semester course; 3 lecture hours. 3 credits. Structured speaking and critical listening experiences within the basic forms of speech communication: interpersonal, small group, and public.

SPE 262 Speech for Broadcast News. Semester course; 3 lecture hours. 3 credits. Theory and application of oral communication skills necessary to produce an effective general American speech pattern suitable for radio and television.

SPE 321 Speech for Business and the Professions. Semester course; 3 lecture hours. 3 credits. Theory and practice in the oral communication process. Organization and presentation of informative and persuasive subject matter in professional contexts related to the student's major area of interest.

SPE 401-402 Oral Interpretation of Literature. Continuous course; 3 lecture hours. 3-3 credits. Theory and practice in the analysis and oral presentation of prose, poetry, and dramatic literature.

Courses in Theatre

With permission of instructor, the following graduate courses may be taken by undergraduates for degree credit: THE 501-502, THE 505-506, THE 508 and THE 513-514. See the *Graduate Bulletin* for course descriptions.

THE 103 Stagecraft. Semester course; 3 lecture hours. 3 credits. The fundamental methods, materials, and techniques of set construction for the stage. Participation in departmental productions.

THE 104 Costume Construction. Semester course; 3 lecture hours. 3 credits. The fundamental methods, materials, and techniques of costume construction for the stage. Participation in departmental productions.

THE 107,108 Introduction to Stage Performance. Semester courses; 3 lecture hours. 3,3 credits. A survey and application of the basic elements in stage performing; acting, scene study, voice, and movement. For non-theatre majors.

THE 113-114 Acting I. Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Development of personal resources; an exploration of performance skills through theatre games, role playing, improvisation, and work on basic script units. Open only to theatre majors upon satisfactory audition.

THE 201-202 Stage Voice and Speech. Continuous course; 2 lecture and 2 studio hours. 3-3 credits. A study of the basic elements of voice and speech to include International Phonetic Alphabet, ear training, sound production, breathing, and application of voice and speech elements to prose and poetry. Open only to theatre majors upon satisfactory audition.

THE 211-212 Introduction to Drama. Continuous course; 3 lecture hours. 3-3 credits. Writing intensive. Analysis and critical examination of plays for methods of interpretation and production qualities.

THE 213-214 Acting II. Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisite:THE 113-114 or equivalent.A practical application of the psychophysical basis of acting through exploration, improvisation,scoring, and performance of scenes. Open only to theatre majors upon satisfactory audition.

THE 221 Basic Scene Design. Semester course; 3 lecture hours. 3 credits. A study of the basic techniques used in designing space for theatre productions. Participation in departmental productions.

THE L221 Basic Scene Design Laboratory. Semester course; 2 studio hours. 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE L223, L224 Practicum in Theatre Technology Laboratory. Semester courses; 2 studio hours. 1, 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 223-224 Practicum in Theatre Technology. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: THE 103, 104. Advanced problem solving in one or more areas of technical theatre.

THE 225 Basic Stage Electronics-Lighting. Semester course;3 lecture hours. 3 credits. A study of the properties and basic principles of electricity as they relate to the utilization of light on the stage. Participation in departmental productions.

THE L225 Basic Stage Electronics-Lighting Laboratory. Semester course; 2 studio hours. 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE L227, L228 Basic Stage Costuming and Makeup Laboratory. Semester courses; 2 studio hours. 1, 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 227-228 Basic Stage Costuming and Makeup. Continuous course;2 lecture and 2 studio hours. 3-3 credits. Prerequisite:THE 104 or permission of instructor. A study of the techniques used to dress the performer, including design theory and makeup application. Participation in departmental productions.

THE 229 Introduction to Lighting Design. Semester course;2 lecture and 2 studio hours. 3 credits. Basic elements of lighting design, composition, orchestration, and color. Participation in departmental productions.

THE L229 Introduction to Lighting Design Laboratory. Semester course;2 studio hours. 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 251, 252/351, 352/451, 452 Rehearsal and Performance. Semester courses; 2, 4, or 6 studio hours. 1, 2, or 3 credits. Work in acting, management,design, or technical areas within a Theatre VCU production.

THE 300 The Enjoyment of Theatre. Semester course; 3 lecture hours. 3 credits. An exploration of how theatre as an art form and as popular entertainment has evolved,its role in society, and its reflection in contemporary media. Lectures and analysis will be supported by attendance at selected performances.

THE 301-302 Advanced Stage Voice and Speech. Continuous course; 2 lecture and 2 studio hours. 3-3 credits. May be repeated for a maximum of six-six credits. First semester: study and practice in the use of voice and speech applied to the plays of Shakespeare. Second semester: study of major stage dialects. Open only to theatre majors upon satisfactory audition.

THE 303/AAS 303 Black Theatre. Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black theatre dramaturgy.

THE 305,306 Scene Design. Semester courses;1 lecture and 4 studio hours. 3,3 credits. Prerequisite:THE 221 and permission of instructor. A study of the techniques and methods of scenic design. Participation in departmental productions.

THE L305,L306 Scene Design Laboratory. Semester courses;2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design technical courses.

THE 307-308 History of the Theatre. Continuous course; 3 lecture hours. 3-3 credits. A study and analysis of theatre history;the architecture, the performer and performances, the stage, the production methods, and the audience.

THE 309, 310 History of Costumes. Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

THE 313-314 Actor's Studio I. Continuous course;1 lecture and 4 studio hours. 3-3 credits. Prerequisite: THE 213-214 or equivalent. Alternative forms of script analysis and character study. Concentrated work on specific acting problems. Open only to theatre majors upon satisfactory audition.

THE 315 Audition. Semester course; 4 studio hours. 2 credits. Prerequisite:THE 214 and permission of instructor. A course designed to instruct students in the various techniques of auditioning as a discrete skill; to include choice, preparation, performance, and evaluation of audition material.Open only to theatre majors.

THE 321, 322 Research Techniques for Costume Design. Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisite:Permission of instructor. A seminar in research and design of costumes for the theatre, including discussion of fabrics and special construction methods used in stage costuming. Participation in departmental productions.

THE L321, L322 Research Techniques for Costume Design Laboratory. Semester courses; 2 studio hours. 1, 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE L323, L324 Practicum in Advanced Theatre Technology. Semester courses; 2 studio hours. 1, 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 323-324 Practicum in Advanced Theatre Technology. Continuous course;6 studio hours. 3-3 credits. Prerequisite:Permission of instructor. Advanced problem-solving in technical theatre, with special emphasis on multimedia and new design materials.

THE 325 Stage Management. Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The fundamental responsibilities and techniques of professional stage management.

THE 326 Basic Stage Electronics-Sound. Semester course;3 lecture hours. 3 credits. A study of the basic techniques used to create sound for theatre productions. Participation in productions.

THE L326 Basic Stage Electronics-Sound Laboratory. Semester course;2 studio hours. 1 credit.The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 327 Technical Drawing. Semester course; 3 lecture hours. 3 credits. Prerequisites:THE 221 and permission of instructor. A practical approach to drafting for the theatre, preparation and presentation, including perspective, rotation,development,and graphic solutions pertaining to theatrical construction problems. Open to theatre majors only.

THE 330, 331/430, 431 Production. Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. The design, rehearsal, and performance of dramatic works. Open only to theatre majors.

THE 340, 341/440, 441 Theatre Projects. Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Individual or group projects in acting, directing, costume design, stage design, or dramaturgy. Open only to theatre majors.

THE 361-362 Directing. Continuous course; 3 lecture hours. 3-3 credits. Writing intensive. Lectures and discussions on the theories of stage direction; problems involved in the production of period plays and a study of modern theories. Open only to theatre majors.

THE 403, 404 History of Dramatic Literature. Semester courses; 3 lecture hours. 3, 3 credits. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

THE 407 Advanced Scenic Technique. Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THE 221 or permission of instructor. An intensive involvement in contemporary theory and practice of scenic techniques. Participation in departmental productions.

THE L407 Advanced Scenic Technique Laboratory. Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 413-414 Actor's Studio II. Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: THE 313-314 or equivalent. Advanced character and script analysis. Concentrated work on personal performance limitations and acting problems of each student.

THE 421, 422 Advanced Costume Design. Semester courses; 2 lecture and 2 studio hours. 3,3 credits. Prerequisite: THE 321,322, or permission of instructor. An advanced study of the techniques, methods, and problems of costume design for the student who plans to enter the field professionally.

THE L421, L422 Advanced Costume Design Laboratory. Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories, discussed in design/technical courses.

THE 423,424 Modern Drama. Semester courses; 3 lecture hours. 3, 3 credits. Intensive study of major continental and American plays.

THE 426/ENG 426 Playwriting. Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENG 317 or permission of instructor. A practical introduction to the creation of original scripts for theatre. Works may be selected for reading and performance. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.

THE 429 Advanced Lighting Design. Semester course; 2 studio hours. 3 credits. A study of light as a method of creating mood within stage settings. Participation in departmental productions.

THE L429 Advanced Lighting Design Laboratory. Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

THE 435/ENG/435 Creative Writing: Poetry. Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: Permission of instructor. Study of the craft of writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of quality work and to become proficient in critical analysis in order to evaluate and articulate the strength of their own poetry. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.

THE 437/ENG 437 Creative Writing: Fiction. Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: Permission of instructor. Study the craft of fiction writing, with instruction and guidance toward constructive self-criticism.

Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate and articulate the strength of their own work. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.

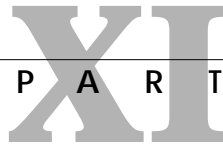
THE 461, 462 Advanced Directing. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: THE 361-362. Further study in direction techniques, especially the problems of the full-length play.

THE 490 Senior Seminar. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. Research and/or creative project in the drama major's area of special interest pursuant to graduate study or professional work in the student's chosen field.

THE 491 Topics in Theatre. Semester course; variable; 1-3 credits per semester. May be repeated for a maximum of nine credits. Flexible term course in selected aspects of performance, theory, literature, or history. See the *Schedule of Classes* for specific topics to be offered each semester.

THE 493, 494 Professional Internship. Semester courses; 3-9 credits. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

THE 496 Practicum in Creative Dramatics. Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. A study of the theory of creative dramatics as it applies to elementary and secondary school education. A supervised practicum in the application of theory to classroom methods.



School of Business

Howard P. Tuckman

Dean and Professor of Economics (1993) BS 1963 Cornell University; MS and PhD 1970 University of Wisconsin

E. G. Miller

Associate Dean for Administration and Associate Professor of Insurance and Management Science (1973) BS, MA and PhD 1976 University of Alabama; CLU; CPCU

Walter S. Griggs, Jr.

Associate Dean for Undergraduate Studies and Associate Professor of Business Law (1971) MH and JD University of Richmond; EdD 1979 College of William and Mary

Charles J. Gallagher

Associate Dean for External Affairs and Associate Professor of Economics (1971) BS Rider College; PhD 1971 West Virginia University

The primary objective of the School of Business is to prepare students for professional careers in business, government, research, and education. Under this objective, the School of Business renders service to the business community, engages in and encourages research in business related fields, provides service to other schools in the University, and contributes to identifying and solving problems related to the University's urban mission.

The general education requirements taken by business students provide a broad knowledge of the liberal arts in general. Major requirements provide business students with an opportunity for extensive study in specific fields.

The school offers degree programs in accounting, business administration, economics, finance, human resource management/industrial relations, information systems, management, marketing, production/operations management, and real estate and urban land development.

Finance majors choose a specialization in finance or insurance/risk management. Information systems majors choose a specialization in client/server, network management, information engineering, or decision support technologies. Majors in management can choose a specialization in entrepreneurship and small business or in general management.

Accreditation

The School of Business is accredited by the American Assembly of Collegiate Schools of Business (AACSB) which accredits programs of professional education in business at the collegiate level. The AACSB evaluates curricula, faculty credentials, library facilities, physical plant and equipment, and financial support of the institution.

Scholarships and Awards

In addition to University scholarships, business students may apply and compete for scholarships awarded through the School of Business endowed scholarship funds or through the various School of Business academic programs. Scholarships for School of Business freshmen are administered via the University admissions process. All other scholarships are for continuing students. For more information, contact the School of Business Undergraduate Office, Room 3119.

Several nonmonetary awards are presented in recognition of scholastic achievement and service. These include the Dean's Scholars, the Delta Sigma Pi Scholarship Key, Virginia Society of Certified Public Accountants Award of Achievement, and the *Wall Street Journal* Award. The School of Business Honors Program recognizes outstanding students, faculty, and alumni at its annual Honors Program.

Honorary and Professional Organizations

VCU's business school seeks to improve the quality of its programs and to provide educational development opportunities for its students through active chapters of honorary and professional organizations.

Beta Gamma Sigma is a national scholarship society founded to encourage and reward scholarship and accomplishment among business students. The upper five percent of the junior class and the upper ten percent of the senior class are eligible for election into the society.

Beta Alpha Psi, a national accounting honorary society, elects its members on the basis of scholarly achievement in accounting courses; the National Honor Society of Omicron Delta Epsilon recognizes scholarship in economics; and Alpha Mu Alpha is the national honor society in marketing.

Business students are encouraged to participate in student professional organizations such as The Accounting Society; the Association of Information Technology Professionals; Delta Sigma Pi, an international fraternity that contributes to the development of students in all business disciplines; the Financial Management Association; Gamma Iota Sigma, a national fraternity for students interested in insurance; Rho Epsilon, a national fraternity for students interested in real estate; the American Marketing Association; the Society for Advancement of Management; the Society for Human Resource Management; and the Jennings Society for students interested in economics.

Honors Program

The University Honors Program provides academic and other opportunities for academically superior students and is open to qualified business students. For a detailed description of qualifications for admission, see Part II of this *Bulletin*.

Cooperative Education and Internships

Business students are eligible for the University Cooperative Education Program. Qualified students placed with an employer will either alternate one semester of full-time study with one semester of full-time work or combine study with part-time work during the same semester. The School of Business also offers internships, allowing advanced students to pursue part-time work assignments with area employers.

International Business

Students interested in international business are encouraged to participate in programs available in the School of Business and in other divisions of the University. The international dimensions of business are discussed in a number of courses required of business students. Additionally, the School of Business offers specialized courses that address specific international topics. A minor in international studies is offered through the College of Humanities and Sciences.

VCU students can also participate in the International Student Exchange Program (ISEP), which allows a student to complete some course work toward a degree while attending a foreign institution. The University also organizes specialized travel and study abroad programs through the Center for International Programs.

Business Council

The Business Council of the School of Business is composed of leading business executives. The council meets periodically to advise and assist the dean and faculty in the development of the total educational program and to help in the school's continuing efforts to maintain academic excellence.

Academic Policies

School of Business degree programs are organized into two components – the foundation program and the advanced program.

Students admitted to the School of Business as freshmen or sophomores enroll in the foundation program. Continuing students who meet the academic standards are admitted to the advanced program, the majors, at the beginning of their junior year. Transfer applicants also are considered for admission to the foundation and advanced programs.

Acceptance into a major is competitive and based on academic performance. To maintain the quality of its educational programs, the number of students admitted in any semester depends on the resources available to

the school. All students admitted to a major must meet a 2.25 cumulative grade-point average (CGPA) requirement and must have completed, prior to enrollment in the advanced program, at least 54 credits in the foundation program or its equivalent. Transfer students must also meet the 2.25 CGPA for courses taken at their former institutions. The 54 required credits must include the following courses or their equivalents: ENG 101-200, BUS 171-212, ECO 210-211, and BUS 203-204.

Applications and information for admission to all undergraduate programs in the School of Business can be obtained from the Office of Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284-2526.

Admission Deadlines

Prospective students for the School of Business must follow the application submission dates for the University as stated in Part II of the *Bulletin*.

A student completing the business foundation program must apply for admission to the advanced program by requesting a change of major. Students currently enrolled in degree programs at VCU who seek a change of major to a School of Business program also should file a change of major request. All change of major requests should be done in the School of Business Office of Undergraduate Studies, Room 3119. If approved, the change of major becomes effective at the beginning of the following semester.

Accelerated Program

The School of Business Accelerated Program enables students to earn both a bachelor's and a master's degree in one of the business disciplines within four years. First semester freshmen with at least a 1270 SAT score and a high school class rank in the upper 15 percentile are eligible to apply for the program. To remain in the program, students must maintain a 3.5 GPA or better.

In addition to saving time and money, students in this program are guaranteed admission to a master's program in the School of Business. Students may apply to the accelerated program through the School of Business Office of Undergraduate Studies, Room 3119.

Guaranteed Admission

VCU students who receive their undergraduate degrees in business are guaranteed admission into a VCU School of Business master's degree program if they rank in the top 15 percent of their high school class with a minimum 3.0 GPA, have a minimum recentered SAT score of 1270, and have an undergraduate CGPA of at least 3.5. An on-campus interview is recommended.

Enrollment in Business Courses

All VCU students can enroll in freshman and sophomore business courses (all 100-200-level courses with BUS or ECO prefixes) provided prerequisites are met.

Only juniors, seniors, and graduate students admitted to a major field within the University and special stu-

dents with a bachelor's degree are eligible for enrollment in all upper-division courses (300-400-level courses with BUS or ECO prefixes). Students without these qualifications may enroll in the following upper-division courses if the prerequisites are met:

BUS 301-302	Business Statistics
BUS 305	Tax Planning for Individuals
BUS 315	Personal Financial Planning
BUS 316	Principles of Real Estate
BUS 333	Risk and Insurance
BUS 358	Structured and Object Programming
BUS 360	Business Information Systems
BUS 362	Computer Hardware and Software
BUS 421	Small Business Management
BUS 428	Employee Benefit Planning
BUS 444	Occupational Safety, Health, and Security

Limitation on Total Credits Earned by Non-Business Majors

The number of credits that nonbusiness majors may accumulate from enrollment in classes offered by the School of Business is limited to a maximum of 25 percent of the total credits required for graduation in their programs. Students who wish to present more than 25 percent of their course work in business and/or economics must be admitted to a major in the School of Business, must complete a minimum of 27 credits from the School of Business advanced program after acceptance into the major, and must meet all graduation requirements of the school. This does not limit the number of courses in economics for economics majors in the College of Humanities and Sciences.

Transfer Policies

In addition to meeting the general requirements of the University and the School of Business, transfer students who plan to enroll in an undergraduate program in business must comply with the following:

1. Calculation of the CGPA requirement for admission into the School of Business advanced program is based on grades earned at all institutions attended.
2. Transfer of business and economics courses from two-year institutions is limited to courses offered by the School of Business in the lower division (freshman and sophomore years).
3. Transfer of business and economics courses from institutions offering bachelor's degrees is limited to courses offered at levels no lower than the levels of comparable courses offered by the School of Business.

Student Advising

Every student admitted to a major is assigned a faculty adviser from that major field of study. Students enrolled in the foundation program are assigned advisers to assist them until the foundation program is completed. The advisers assist students in planning course work, becoming familiar with University services, inter-

preting University rules and procedures, and clarifying career objectives.

While the faculty of the School of Business provides information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his or her program. Students should familiarize themselves with curriculum requirements, appropriate sequencing of courses and course prerequisites, and academic regulations covered in Part VI of this *Bulletin*.

Double Majors

A double major fulfills the requirements of two majors concurrently. To earn a degree with a double major, the student must fulfill all the requirements of the degree programs of which the majors are a part. Students can declare a double major in the School of Business through the change of major process in the Office of Undergraduate Studies. The request for a double major should be approved before the student begins courses in the second major. For a second major in the School of Business, the student must complete all courses required for each major. If more than one course overlaps both majors, the student must complete additional courses to reach a minimum of 24 credits in the second major. The chair of the department in which the second major is offered must approve all second major courses at the time the student declares the double major. Students admitted to the double major are assigned an adviser in each major.

General Requirements for Bachelor of Science in Business

To complete this degree, a minimum of 120 credits is required, with no more than four of those credits in physical education, and no more than another four credits from BUS 160 through BUS 168 courses. The foundation program specifies course work required during the freshman and sophomore years. Students who successfully complete a minimum of 54 credits in the foundation program – including ENG 101-200, ECO 210-211, BUS 171-212, and BUS 203-204 – meet the course requirements for admission into a major in the School of Business.

The advanced program details the course requirements for students admitted to a major in the school. Candidates for the bachelor's degree in business must complete the 120 credits outlined in the combination of the foundation and advanced programs.

FOUNDATION PROGRAM

1. General Requirements

ENG 101-200 Composition and Rhetoric
 ECO 210-211 Principles of Economics
 BUS 171 Mathematical Applications for Business
 BUS 212 Differential Calculus and Optimization for Business
 SPE 121 or 321 Effective Speech or Speech for Business and the Professions (Only one of these courses may be used to fulfill degree requirements.)

Credits
21

2. Restricted Electives

a. Natural Science
 One course with lab from the following:

21

BIO 101 Life Science	
BIO 102 Science of Heredity	
BIO 103 Environmental Science	
CHE 101-102 General Chemistry	
CHE 103 Modern Chemistry	
CHE 110 Chemistry and Society	
PHY 101 Foundations of Physics	
PHY 103 Astronomy	
PHY 105 Physical Geology	
PHY 107 Wonders of Technology	
PHY 201-202 General Physics	
b. Human Behavior	
One course from psychology, sociology, or anthropology, except PSY 214 Applications of Statistics which cannot be taken for degree credits by business majors.	
c. Institutional Studies	
One course from the following: (Accounting majors must take political science.)	
HIS 101 or 102 Survey of European History	
HIS 103 or 104 Survey of American History	
POS 103 U. S. Government	
POS 105 International Relations	
POS 201 Introduction to Politics	
d. Literature, Philosophy, Language	
One course from the following:	
ENG 201 or 202 Western World Literature I and II	
ENG 203 or 204 British Literature I and II	
ENG 205 or 206 American Literature I and II	
ENG 241 Shakespeare's Plays	
PHI 103 Ancient Greek and Medieval Western Philosophy	
PHI 104 Modern Western Philosophy	
Any foreign language	
e. Visual and Performing Arts	
One course from the approved list in this Bulletin (See "General Education Courses Recommended for Nonschool of the Arts Majors" in index.)	
f. Additional Restricted Electives	
Select remainder of 21 credits from any of the other courses listed above in (a) through (e).	
3. Non-School of Business Electives	12
(BUS 302 and a maximum of 4 credits from the BUS 160 series can be used as nonbusiness electives.)	
4. School of Business Foundation Core	6
BUS 203-204 Introduction to Accounting	
5. Business and/or Non-Business Electives	3
Finance majors must take BUS 302, and accounting majors should consult recommended electives under the accounting major requirements. All School of Business students entering junior-level BUS and ECO courses are expected to have competency in computer-based word processing and spreadsheet skills such as those taught in BUS 160, 161, and 162.	
	63

ADVANCED PROGRAM

1. School of Business Advanced Core	Credits
BUS 301 Business Statistics	30
BUS 308 Introduction to Marketing	
BUS 311 Financial Management	
BUS 319 Organizational Behavior	
BUS 320 Production/Operations Management	
BUS 323 Legal Environment of Business (Accounting majors must take BUS 481 in place of BUS 323)	
BUS 325 Organizational Communication	
BUS 360 Business Information Systems	
BUS 434 Strategic Management	
ECO 303 Managerial Economics	

2. Major Requirements – listed under the major requirement section of each department 27

57

TOTAL FOUNDATION AND ADVANCED PROGRAMS 120**Minor in General Business**

The minor in general business is for nonbusiness majors and consists of the following 21 credits: ECO 203 Introduction to Economics, BUS 202 Accounting for Nonbusiness Majors, BUS 308 Introduction to Marketing (prerequisites: ECO 203 and junior standing), BUS 311 Financial Management (prerequisites: BUS 202 and junior standing; pre or corequisite: BUS 301), BUS 319 Organizational Behavior (prerequisite: junior standing), BUS 323 Legal Environment of Business (prerequisite: junior standing), and BUS 360 Business Information Systems. A cumulative GPA of 2.0 must be attained in these courses.

Department of Accounting**Ruth W. Epps**

Associate Professor and Chair (1987) BS Virginia Union University; MS University of Pittsburgh; MAcc and PhD 1987 Virginia Commonwealth University; CPA

- Bae, Benjamin B. (1998) *Assistant Professor* BA Hankuk University of Foreign Studies, Seoul, Korea; MBA Sogang University, Seoul, Korea; MSA California State University; PhD 1998 Temple University
- Coffman, Edward N. (1965) *Professor* BS and MS Virginia Commonwealth University; DBA 1973 George Washington University
- Edmunds, Wayne L. (1984) *Associate Professor* AB, JD and MLT 1984 College of William & Mary; CPA
- Everett, John O. (1982) *Professor* BS and MS University of Southern Mississippi; PhD 1978 Oklahoma State University; CPA
- Holley, Charles L. (1975) *Professor* BS East Tennessee State University; MAS University of Illinois; DBA 1976 University of Tennessee; CPA
- Hull, Rita P. (1982) *Professor* BA Augustana College; MA Western Illinois University; PhD 1978 Oklahoma State University; CPA; CIA
- Olds, Philip R. (1981) *Associate Professor* BBA Georgia Southern College; MPA and PhD 1982 Georgia State University; CPA
- Schwartz, Bill N. (1990) *Professor* BBA University of Wisconsin; MA University of Illinois, Chicago; PhD 1978 University of California, Los Angeles; CPA
- Spede, Edward C. (1981) *Associate Professor* BBA St. John's University; MAcc and PhD 1982 Virginia Polytechnic Institute and State University; CPA
- Spindle, Roxanne M. (1990) *Associate Professor* BA and MS University of Colorado; MT University of Denver; PhD 1991 University of Colorado; CPA
- Thompson, Robert B., II (1997) *Associate Professor* BS and PhD 1984 University of Florida
- Tondkar, Rasoul H. (1980) *Professor* BBA University of North Texas; MBA University of Dallas; PhD 1980 University of North Texas
- Vijayakumar, Jayaraman (1997) *Assistant Professor* BE Bangalore University; MBA Indian Institute of Science; PhD 1990 University of Pittsburgh
- Wier, Benson (1992) *Assistant Professor* BS, BA and MSA University of Arkansas; PhD 1993 Texas Tech University; CPA

Emeriti Faculty

- Dunn, Clarence L. *Professor Emeritus* BS, MS and PhD University of Illinois
- Holmes, Raymond T., Jr. *Professor Emeritus* BS University of Richmond; MS Virginia Commonwealth University; CPA
- Sperry, John B. *Professor Emeritus* BS New York University; MBA University of Pennsylvania; PhD American University; CPA
- Williams, Jackie G. *Assistant Professor Emerita* BS James Madison University; MS Virginia Commonwealth University

Willis, H. David *Associate Professor Emeritus* BS West Virginia University;MED Virginia Polytechnic Institute and State University

The accounting program prepares students for careers as professional accountants in public practice, industry, and government. Students are encouraged to sit for a professional examination at the completion of the degree requirements.

Major Requirements

		<i>Credits</i>
BUS 303-304	Intermediate Accounting I and II	6
BUS 306	Cost Accounting	3
BUS 307	Accounting Systems	3
BUS 404	Advanced Accounting	3
BUS 405	Tax Accounting	3
BUS 406	Auditing	3
Select two courses from the following four:		6
BUS 401	Governmental and Not-For-Profit Accounting	
BUS 407	Advanced Auditing	
BUS 410	Advanced Tax Accounting	
BUS 411	Accounting Opinions and Standards	

27

Recommended Electives (if not selected above)

BUS 401	Governmental and Not-For-Profit Accounting
BUS 407	Advanced Auditing
BUS 410	Advanced Tax Accounting
BUS 411	Accounting Opinions and Standards
BUS 482	Law for Accountants II

Post-Baccalaureate Certificate in Accounting

This certificate is designed for people who have earned a bachelor's degree in a field other than accounting and wish to continue their education but do not aspire to a master's degree. A complete description of this program is given in the *Graduate Bulletin*.

Department of Economics

Edward L. Millner

Professor and Chair (1983) BA Hampden-Sydney College; PhD 1981 University of North Carolina

- Beall, Larry G. (1970) *Associate Professor and Director, Center for International Urban Management* BS State University of New York, Binghamton; MA University of South Carolina; PhD 1973 Duke University
- Bowman, John H. (1981) *Professor* BS, MA and PhD 1973 Ohio State University
- Davis, Douglas D. (1987) *Professor* BA Western Kentucky University; PhD 1984 Indiana University
- Gallagher, Suzanne (1990) *Assistant Professor and Director, Center for Economic Education, School of Business* BS and MA 1981 University of West Florida
- Harless, David W. (1993) *Associate Professor* BS Augustana College; PhD 1988 Indiana University
- Hoffer, George E. (1970) *Professor* BS University of Richmond; MS Virginia Polytechnic Institute and State University; PhD 1972 University of Virginia
- Mitchell, Shannon K. (1990) *Associate Professor* BS Ball State University; MA and PhD 1989 University of Virginia
- O'Toole, Dennis M. (1967) *Associate Professor* BA College of William & Mary; MS Virginia Commonwealth University; PhD 1971 Ohio University
- Peterson, Steven P. (1989) *Associate Professor* BA and MA Bowling Green State University; PhD 1989 Indiana University
- Pratt, Michael D. (1979) *Professor and Director, Center for Urban Development* BS University of Richmond; MA and PhD 1977 University of Kansas

- Reilly, Robert J. (1978) *Professor* BBA Wake Forest University; MBA Adelphi University; PhD 1978 University of Tennessee
- Scotese, Carol A. (1997) *Assistant Professor* BA, MA and PhD 1991 Pennsylvania State University
- Stratton, Leslie S. (1997) *Assistant Professor* BA Wesleyan University; PhD 1989 Massachusetts Institute of Technology
- Tuckman, Howard P. (1993) *Professor and Dean, School of Business* BS Cornell University; MS and PhD 1970 University of Wisconsin
- Wetzel, James N. (1974) *Associate Professor* BS University of Wisconsin; PhD 1974 University of North Carolina

Emeriti Faculty

- Dalton, Amy H. *Associate Professor Emerita* BA Westhampton College; MA University of Pennsylvania; PhD University of Virginia
- Ferguson, Clinton S. *Associate Professor Emeritus* BBA University of Chattanooga; MS University of Tennessee
- Harrison, William B., III *Associate Professor Emeritus* BA and MA University of Richmond; PhD University of Maryland
- Hellmuth, William F. *Professor Emeritus* BA and PhD Yale University
- Moszer, Max *Professor Emeritus* AB, AM and PhD University of Pennsylvania
- Snellings, Eleanor C. *Associate Professor Emerita* AB and MA University of North Carolina; PhD Duke University

The economics major offers an introduction to the fundamentals of business and economics, with a concentration on methods of economic analysis in the third and fourth years. This curriculum prepares students for positions in business and government and for graduate or professional study. The department also offers courses in economics to meet the needs of students in other VCU curricula.

A major in economics is also offered by the College of Humanities and Sciences and is designed for students who prefer a liberal arts core.

Major Requirements

		<i>Credits</i>
ECO 301	Microeconomic Theory	3
ECO 302	Macroeconomic Theory	3
ECO 307	Money and Banking	3
ECO 489	Senior Seminar in Economics	3
ECO Electives	(must be 300 or 400-level courses)	12
BUS 302	Business Statistics	3

27

Minor in Economics

A minor in economics is described in Part VIII, College of Humanities and Sciences.

Department of Finance, Insurance, and Real Estate

David A. Dubofsky

Professor and Chair (1997) BE City College of New York; MBA University of Houston; PhD 1982 University of Washington; CFA

- Baranoff, Etti (1995) *Assistant Professor of Finance and Insurance* BA Tel-Aviv University; PhD 1993 University of Texas, Austin
- Boykin, James H. (1971) *Professor and Alfred L. Blake Chair Professor of Real Estate* BS Virginia Polytechnic Institute and State University; MCom University of Richmond; PhD 1971 American University; MAI; CRE
- Daniels, Kenneth N. (1990) *Associate Professor of Finance* BA Fairfield University; MA and PhD 1990 University of Connecticut
- Ferguson, Jerry T. (1965) *Professor of Real Estate and Urban Land Development* BS and MS Virginia Polytechnic Institute and State University; PhD 1978 University of Florida

Hubbard, Elbert W. (1981) *Associate Professor of Finance* BBA, MBA and PhD 1973 University of Cincinnati
 McDonald, R. Michael (1977) *Associate Professor of Safety and Risk Administration* BS and MS Central Missouri State University; EDD 1985 Virginia Polytechnic Institute and State University
 Miller, E. G. (1973) *Associate Professor of Insurance and Management Science and Associate Dean for Administration, School of Business* BS, MA and PhD 1976 University of Alabama; CLU; CPCU
 Murphy, Neil B. (1988) *Professor of Finance* BS and MS Bucknell University; PhD 1968 University of Illinois; CCM
 Myers, Phyllis S. (1982) *Associate Professor of Finance and Insurance and Director, Insurance Studies Center* BBA Georgia State University; MBA and PhD 1984 University of South Carolina; CLU; FLMI
 Phillips, Richard A. (1994) *Associate Professor of Real Estate and Urban Land Development* BA Old Dominion University; PhD 1981 University of North Carolina
 Ramírez, Gabriel G. (1997) *Professor of Finance* BS Instituto Tecnológico de Estudios Superiores de Monterrey; MBA and PhD 1988 Georgia State University
 Salandro, Daniel P. (1989) *Associate Professor of Finance* BA St. Vincent College; MA and PhD 1990 University of Pittsburgh
 Shin, Tai S. (1978) *Professor of Finance* BA Oklahoma City University; MA and PhD 1969 University of Illinois
 Upton, David E. (1987) *Professor of Finance* BA and MBA University of Connecticut; PhD 1976 University of North Carolina; CFA

Emeriti Faculty

Berry, Sam G. *Associate Professor Emeritus of Finance* BS, MBA and DBA Florida State University
 Thornton, Jack E. *Professor Emeritus of Finance* BS, MS and PhD University of North Carolina

Finance

The major in finance prepares students for graduate-level study of finance and for careers in corporate finance, the securities industry, banking, and insurance. Students choose a concentration in one of two tracks – finance or insurance/risk management. (Courses directly related to risk, insurance, and employee benefits are approved for 42 Virginia insurance continuing education credits for insurance agents. Contact the Director of Insurance Studies for further information.)

Major Requirements

	<i>Credits</i>
BUS 312 Intermediate Financial Management	3
BUS 314 Investments	3
BUS 333 Risk and Insurance	3
BUS 437 Funds Management in Financial Institutions	3
Select one of the two tracks (15 credits)	15

 27

1. Finance Track

BUS 414 Security Analysis and Portfolio Management
 BUS 416 International Financial Management
 BUS 417 Cases in Financial Management
 BUS 455 Options, Futures, and Swaps
 Approved Finance Elective

Approved Electives for the Finance Track

BUS 303 Intermediate Accounting I
 BUS 306 Cost Accounting
 BUS 413 Comparative Financial Systems
 BUS 424 Property and Liability Insurance
 BUS 426 Life and Health Insurance
 BUS 429 Real Estate Finance
 BUS 491 Topics in Business (Finance Topic)
 BUS 493 Internship
 ECO 307 Money and Banking
 ECO 402 Business Cycles and Forecasting

2. Insurance/Risk Management Track

BUS 424 Property and Liability Insurance
 BUS 428 Employee Benefit Planning
 Choose two of the following:
 BUS 426 Life and Health Insurance
 BUS 430 Social Insurance
 BUS 432 Insurance Law
 Approved Insurance/Risk Management Elective

Approved Electives for the Insurance/Risk Management Track

BUS 305 Tax Planning for Individuals
 BUS 331 Human Resource Management
 BUS 332 System Safety
 BUS 334 Incident Investigation and Analysis
 BUS 350 Tort Law
 BUS 413 Comparative Financial Systems
 BUS 416 International Financial Management
 BUS 417 Cases in Financial Management
 BUS 493 Internship
 ECO 307 Money and Banking
 ECO 421 Government and Business

Real Estate and Urban Land Development

The major in real estate and urban land development prepares students for careers in land development, brokerage, valuation and investment counseling, site analysis and selection, real property management, mortgage lending, and bank trust and corporate real estate departments, as well as other real estate related careers in the public and private sectors.

Major Requirements

	<i>Credits</i>
BUS 316 Principles of Real Estate	3
BUS 317 Real Property Management	3
BUS 326 Real Estate Law	3
BUS 423 Real Estate Brokerage	
OR BUS 431 Advanced Real Estate Appraisal	3
BUS 425 Real Estate Appraisal	3
BUS 429 Real Estate Finance	3
BUS 437 Funds Management in Financial Institutions	
OR ECO 307 Money and Banking	3
Plus any two of the following five courses:	6
BUS 310 Information for Marketing Decisions	
BUS 318 Real Estate Negotiating	
BUS 423 Real Estate Brokerage	
BUS 431 Advanced Real Estate Appraisal	
USP 302 Land Use Capability	

 27

Post-Baccalaurate Certificate in Real Estate and Urban Land Development

This post-baccalaureate certificate is designed for people who have earned a bachelor's degree in a field other than real estate and urban land development and who wish to continue their education but do not aspire to a master's degree. A complete description of this program is given in the *Graduate Bulletin*.

Department of Information Systems

George M. Kasper

Professor and Chair (1996) BA State University of New York, Brockport; MBA and PhD 1983 State University of New York, Buffalo

Aiken, Peter H. (1993) *Assistant Professor* BS and MS Virginia Commonwealth University; PhD 1989 George Mason University

- Blanks, Edwin E. (1965) *Associate Professor and Vice Provost for Academic Administration* BS and MS 1967 Virginia Commonwealth University;CSP
- Bryson, Noel (1998) *Professor* BS University of the West Indies; MS Howard University;PhD 1988 University of Maryland
- Chin, Amita Goyal (1993) *Assistant Professor* BS, MS, and PhD 1994 University of Maryland
- Coppins, Richard J. (1978) *Associate Professor* BS and MS Lehigh University;PhD 1975 North Carolina State University
- Fuhs, F. Paul (1975) *Assistant Professor* BS Spring Hill College; MS Purdue University; BD Boston College; PhD 1977 University of Massachusetts
- Gasen, Jean B. (1978) *Associate Professor* BA Case Western Reserve University; MA Western Michigan University; PhD 1978 University of Wisconsin, Madison
- Hubona, Geoffrey S. (1996) *Assistant Professor* BA University of Virginia; MBA George Mason University; MA and PhD 1993 University of South Florida, Tampa
- Lee, Allen (1998) *Professor* BS Cornell University; MS University of California, Berkeley; PhD 1982 Massachusetts Institute of Technology
- Mann, Robert I. (1988) *Associate Professor* BA Stanislaus State University; MBA California State University; MS Southern Methodist University;PhD 1981 Arizona State University
- Ngwenyama, Ojelanki (1997) *Associate Professor* BS Roosevelt University;MBA Syracuse University;PhD 1988 State University of New York
- Redmond, Richard T. (1983) *Associate Professor* BS Shippensburg State College;DBA 1983 Kent State University
- Sutherland, John W. (1980) *Professor* BS, MS and PhD 1967 University of California, Los Angeles
- Weistroffer, H. Roland (1983) *Associate Professor* MA Duke University; DSc 1976 Free University, Berlin
- Wynne, A. James (1974) *Associate Professor* BS Rensselaer Polytechnic Institute; MS Virginia Commonwealth University; PhD 1978 University of Nebraska, Lincoln
- Yoon, Youngohc (1995) *Associate Professor* BS Chung-Ang University; MS University of Pittsburgh; PhD 1989 University of Texas, Arlington

Emeriti Faculty

- Hodge, Bartow *Professor Emeritus* BS, MS and PhD Louisiana State University
- Morecroft, Josephine F. *Associate Professor Emerita* BA Hunter College; MBA and PhD Union College, New York
- Riehl, Julian William *Associate Professor Emeritus*

The major in information systems is designed to prepare students for professional careers in the discipline of information systems/technology. Through required and elective courses, students are prepared for positions as programmers, systems analysts, software analysts, and network analysts. The department also offers courses in information systems to meet the needs of students in other curricula offered by the University and of those who are seeking to enhance their knowledge of information systems.

The major requires students to take six required courses and then choose a three-course track.

Major Requirements

	<i>Credits</i>
A. Major Core (18 credits)	
BUS 358 Structured and Object Programming	3
BUS 361 Systems Analysis and Design	3
BUS 362 Computer Hardware and Software	3
BUS 464 Database Systems	3
BUS 465 Projects in Information Systems	3
BUS 470 Local Area Networks	3
B. Select one of the following tracks	9

1. Client/Server

The client/server track is for students interested in the development of object-oriented, graphic user interface (GUI) based, distributed applications. It emphasizes the client and server aspects of the implementation environment.

- BUS 359 Advanced Structured and Object Programming
- BUS 462 Windows Programming in C++
- Approved Elective

2. Network Management

The network management track is for students interested in the implementation and management of local and wide area networks. It emphasizes the network aspects of the implementation environment.

- BUS 359 Advanced Structured and Object Programming
- BUS 467 Distributed Data Processing and Telecommunications
- Approved Elective

3. Information Engineering

The information engineering track focuses on the development of comprehensive approaches to information systems development as a part of organizational strategic planning. Consequently, it is offered only to students who are able to demonstrate significant work experience in one or more of the following areas:

- * analyzing/designing systems.
- * planning/managing information technology development projects.
- * planning/managing organizations from a strategic perspective.
- BUS 461 Information Systems Planning
- BUS 463 Reengineering Technology in Organizations
- BUS 468 Information Engineering

4. Decision Support Technologies

The decision support technologies track may be selected only by professionals already working in information systems who have already demonstrated their programming proficiency on the job, and wish to extend their education into the support of complex decision-making and control processes in organizations.

- BUS 469 Information and Decision Systems in Organizations
- Choose two of the following:
- BUS 302 Business Statistics
- BUS 339 Management Science
- BUS 439 Quality I
- BUS 440 Forecasting Methods and Process

APPROVED ELECTIVES (FOR TRACKS 1 AND 2)

- BUS 363 COBOL Programming
- BUS 366 Computerware Analysis
- BUS 461 Information Systems Planning
- BUS 462 Windows Programming in C++
- BUS 463 Reengineering Technology in Organizations
- BUS 466 Applications Programming
- BUS 467 Distributed Data Processing and Telecommunications
- BUS 468 Information Engineering
- BUS 469 Information and Decision Systems in Organizations
- BUS 491 Topics in Business (Information Systems Topic)
- BUS 492 Independent Study
- BUS 493 Internship

Note: BUS258 (Visual Basic Programming) is a prerequisite for BUS 358. BUS 258 cannot be used as an elective within the major of information systems, but may be used in the Business Foundation Program under the category "Business and/or Nonbusiness Electives".

Note: All majors in information systems are encouraged to take additional work in the area of decision sciences (BUS 302, BUS 339, BUS439, BUS 440).

Post-Baccalaureate Certificate in Information Systems

The post-baccalaureate certificate in information systems is designed for students who have earned a baccalaureate degree in a field other than information systems and who desire to continue their education beyond

the undergraduate-level but do not aspire to a master's degree. A complete description of the program is given in the *Graduate Bulletin*. For information relating to the certificate program, contact the Associate Dean for Graduate Studies, School of Business, 1015 Floyd Avenue, Richmond, VA 23284-4000.

Department of Management

Anson Seers

Professor and Chair (1996) BS and MS University of Illinois; PhD 1981 University of Cincinnati

- Ackley, R. Jon (1979) *Associate Professor of Management* BS and MEd Bloomsburg State College; EdD 1979 Utah State University
- Andrews, Robert L. (1978) *Associate Professor of Decision Sciences* BS and MA University of Alabama; MS and PhD 1971 Virginia Polytechnic Institute and State University
- Barker, Randolph T. (1989) *Associate Professor of Management* BA, MA and PhD 1976 Florida State University
- Byles, Charles M. (1990) *Associate Professor of Management* BS University of West Indies; MBA University of Toledo; DBA 1986 Kent State University
- Byrd, Donna G. (1979) *Instructor of Management Science* BA College of William & Mary; MBA 1978 Virginia Commonwealth University
- Canavos, George C. (1975) *Professor of Management Science* BS, MS and PhD 1971 Virginia Polytechnic Institute and State University
- Gilbreath, Glenn H. (1971) *Professor of Management Science* PhD 1971 University of Alabama
- Gray, George R. (1977) *Associate Professor of Human Resource Management and Industrial Relations* BS Auburn University; MBA University of Scranton; PhD University of Alabama; JD 1987 University of Richmond
- Humphrey, Ronald H. (1996) *Associate Professor of Management* BA University of Chicago; PhD 1984 University of Michigan
- Johnson, Iris W. (1982) *Associate Professor of Management* BS Longwood College; MS Virginia Commonwealth University; EdD 1981 Virginia Polytechnic Institute and State University
- Kurtulus, Ibrahim S. (1981) *Associate Professor of Management* BS Middle East Technical University; MBA University of Michigan; PhD 1978 University of North Carolina
- McDaniel, Michael A. (1998) *Assistant Professor of Management* BA University of Delaware; MA Loyola University of Chicago; MA and PhD 1986 George Washington University
- Miller, Don M. (1980) *Associate Professor of Decision Sciences* BS Millsaps College; PhD 1970 Virginia Polytechnic Institute and State University
- Miller, Marianne (1993) *Assistant Professor of Management* BA Ohio State University; MS Purdue University; PhD 1992 University of Oregon
- Minor, Elliott D. (1987) *Associate Professor of Operations Management* BA University of Virginia; PhD 1989 University of South Carolina
- Myers, Donald W. (1982) *Professor of Human Resource Management* BA California State University, Sacramento; MBA and DBA 1972 Georgia State University
- Narula, Subhash C. (1983) *Professor of Management Science* BE University of Delhi, India; MS and PhD 1971 University of Iowa
- Pearce, C. Glenn (1975) *Associate Professor of Management* BBA University of Georgia; MA New York University; PhD 1974 Georgia State University
- Pitts, Michael W. (1981) *Associate Professor of Strategic Management* BA University of North Carolina, Charlotte; MBA Winthrop University; DBA 1984 University of Tennessee
- Rimler, George Warren (1970) *Professor of Management* BSME Polytechnic Institute of Brooklyn; MBA and DBA 1970 Georgia State University
- Sleeth, Randall G. (1975) *Associate Professor of Management* BA University of New Hampshire; PhD 1977 University of Massachusetts
- Smith, Charles H. (1982) *Associate Professor of Management Science* BS Alderson-Broadbudd College; MA University of Michigan; MBA College of William & Mary; PhD 1975 University of Maryland
- Spinelli, Michael A. (1969) *Associate Professor of Management Science* BA and PhD 1971 West Virginia University
- Stith-Willis, Annie M. (1987) *Instructor of Management Science* BS and MA 1984 Virginia Commonwealth University

- Trumble, Robert R. (1988) *Professor of Management and Director, Virginia Labor Studies Center* BA Hamline University; MA and PhD 1971 University of Minnesota
- Williams, Larry J. (1997) *Professor of Management* BS and MS Purdue University; PhD 1988 Indiana University
- Williams, Margaret L. (1997) *Associate Professor of Management* BS Heidelberg College; MS Indiana University, Purdue; MBA and PhD 1989 Indiana University, Bloomington
- Wood, D. Robley, Jr. (1979) *Professor of Management* BA Emory and Henry College; MS and DBA 1977 University of Tennessee

Emeriti Faculty

- Brown, Darrell R. *Professor Emeritus of Management* BS University of Kansas; MBA University of New Mexico; PhD University of Oregon
- Bushway, Collin *Professor Emeritus of Management* MBA University of Chicago; DBA George Washington University
- DeGenaro, Guy J. *Professor Emeritus of Management* BS University of Maryland; MBA Indiana University; PhD University of Florida
- Hunt, Eugene H. *Professor Emeritus of Management* BS and MS Virginia Commonwealth University; EdD University of Maryland
- Jackson, J. Howard *Professor Emeritus of Business Education and Office Administration* BS and MS University of Tennessee; PhD Ohio State University; CPS
- Johnston, Russell A. *Professor Emeritus of Management* BS and MS Virginia Commonwealth University; EdD University of Kentucky
- Johnston, Wallace R. *Associate Professor Emeritus of Management and Human Resources Management* BBA, MBA and DBA George Washington University
- Lambert, John D. *Professor Emeritus of Management* BS Virginia Commonwealth University; MS Virginia Polytechnic Institute and State University; PhD University of Michigan
- Tucker, Woodie L. *Professor Emeritus of Management* BS University of Virginia; MEd and PhD University of Pittsburgh
- Umberger, Paul M. *Assistant Professor Emeritus of Management Science* BS and MS Virginia Polytechnic Institute and State University

The Department of Management offers majors in business administration, human resource management/industrial relations, management, and production/operations management.

Business Administration

The business administration major provides a broad education in business by allowing students to take courses in several subject areas.

Major Requirements

The business administration major requires core courses and a choice of four courses as specified:

		<i>Credits</i>
A. Core Courses (15 credits)		
BUS 302	Business Statistics	3
BUS 331	Human Resource Management	3
BUS 339	Management Science	3
BUS 419	Managing Dynamic Organizations	3
BUS 489	Managerial Applications and Skills Development	3
B. Select four courses from the following six areas. At least one course must be taken in each of three different areas.		
		12
		<hr style="width: 10%; margin-left: auto; margin-right: 0;"/> 27

1. Finance

- | | |
|---------|--------------------------------------------|
| BUS 312 | Intermediate Financial Management |
| BUS 314 | Investments |
| BUS 414 | Security Analysis and Portfolio Management |
| BUS 417 | Cases in Financial Management |
| BUS 437 | Funds Management in Financial Institutions |

2. Insurance/Risk Management

BUS 333	Risk and Insurance
BUS 424	Property and Liability Insurance
BUS 426	Life and Health Insurance
BUS 428	Employee Benefit Planning
BUS 430	Social Insurance
BUS 432	Insurance Law

3. Entrepreneurship and Small Business

BUS 421	Small Business Management
BUS 436	New Venture Initiation

4. Human Resource Management/Industrial Relations

BUS 420	Seminar in Industrial Relations
BUS 427	Labor and Employment Relations Law
BUS 433	Compensation Management
BUS 435	Strategic Human Resource Management

5. Production/Operations Management

BUS 385	Production/Operations Management II
BUS 439	Quality I
BUS 440	Forecasting Methods and Process
BUS 441	Production Planning and Control Systems

6. Real Estate and Urban Land Development

BUS 316	Principles of Real Estate
BUS 317	Real Property Management
BUS 326	Real Estate Law
BUS 423	Real Estate Brokerage
BUS 425	Real Estate Appraisal
BUS 429	Real Estate Finance
BUS 431	Advanced Real Estate Appraisal

Human Resource Management/Industrial Relations

The major in human resource management/industrial relations gives students a broad overview of the educational and application aspects of human resource management/industrial relations. Students in this program pursue an in-depth study of a variety of topical areas, including human resource management, labor and employment relations law, compensation management, and employee benefits. Students are encouraged to broaden their knowledge base by taking electives in industrial psychology. After completing this program, students are prepared to enter the public and private sectors in compensation, employee benefits, incentive awards programs, and human resources.

Major Requirements

	<i>Credits</i>	
BUS 331	Human Resource Management	3
BUS 419	Managing Dynamic Organizations	3
BUS 420	Seminar in Industrial Relations	3
BUS 427	Labor and Employment Relations Law	3
BUS 433	Compensation Management	3
BUS 435	Strategic Human Resource Management	3
BUS 489	Managerial Applications and Skills Development	3
Approved Electives		6
(Students planning to attend graduate school should complete BUS 302 as one of the two restricted electives or as a free elective.)		

27

Choose two of the following approved electives:

BUS 302	Business Statistics
BUS 428	Employee Benefit Planning
ECO 431	Labor Economics

Post-Baccalaureate Certificate in Human Resource Management

This certificate is designed to increase the knowledge and skills of human resource practitioners, to prepare individuals who are seeking employment in the field, and to educate persons who desire more knowledge about human resource management. A complete description of this program is given in the *Graduate Bulletin*.

Management

The major in management consists of two tracks. The entrepreneurship and small business track enables students to develop skills in working with small firms and eventually starting small firms of their own. After completion of this program, students are ready to accept a variety of positions in the functional areas of business.

The general management track provides students a broad-based management education, giving the students flexibility in many types of management-level positions sought upon graduation. Students who complete this program are equipped to enter private or public employment in a variety of entry-level positions.

Students who select the management major must complete a three-course core and then an additional six courses in the chosen track.

Major Requirements

	<i>Credits</i>	
A. Major Core (9 credits)		
BUS 331	Human Resource Management	3
BUS 419	Managing Dynamic Organizations	3
BUS 489	Managerial Applications and Skills Development	3
B. Select one of the two tracks (18 credits)		18
		27

1. Entrepreneurship and Small Business Track

BUS 313	Finance for Small and Entrepreneurial Enterprise
BUS 421	Small Business Management
BUS 422	Managing the Family Firm
BUS 436	New Venture Initiation
Approved Electives	

Approved Electives (Choose two)

BUS 306	Cost Accounting
BUS 316	Principles of Real Estate
BUS 333	Risk and Insurance
BUS 346	Technical Systems for Staff and Management
BUS 372	Product Development and Management
BUS 376	Dynamics of Retail Management
BUS 385	Production/Operations Management II
BUS 475	Services Marketing

2. General Management Track

BUS 346	Technical Systems for Staff and Management
BUS 418	International Management
BUS 433	Compensation Management
Management Environment Electives	
Management Applications Elective	
(Students planning to attend graduate school should take BUS 302 as either a Management Applications Elective or a free elective.)	

Management Environment Electives (Choose two)

BUS 324	Legal Aspects of the Management Process
BUS 339	Management Science
BUS 421	Small Business Management

Management Applications Electives (Choose one)

- BUS 302 Business Statistics
 BUS 316 Principles of Real Estate
 BUS 333 Risk and Insurance
 PHI 214 Ethics and Business

Production/Operations Management

Production/operations is the transformation of resources into either tangible products or services. Thus, it is the core function of a business organization, encompassing such areas as quality, manufacturing and service strategy, scheduling, materials and inventory management, purchasing, and forecasting. Majors in production/operations management tend to be comfortable with mathematics, and they like to work with people as well as with numerical data and quantitative methods. Positions in production/operations are found in both manufacturing and service organizations.

Major Requirements

	<i>Credits</i>
A. Core Courses (15 credits)	
BUS 302 Business Statistics	3
BUS 331 Human Resource Management	3
BUS 339 Management Science	3
BUS 385 Production/Operations Management II	3
BUS 439 Quality I	3
B. Select four courses from the following list for a total of 12 credits	12
	<hr style="width: 20%; margin-left: auto; margin-right: 0;"/> 27
BUS 306 Cost Accounting	
BUS 386 Logistics and Physical Distribution	
BUS 440 Forecasting Methods and Process	
BUS 441 Production Planning and Control Systems	
BUS 483 Purchasing and Materials Management	
BUS 491 Topics in Business (approved topic)	
Approved Elective – Choose one of the following:	
PSY 310 Industrial Psychology	
BUS 324 Legal Aspects of the Management Process	
BUS 361 Systems Analysis	
BUS 419 Managing Dynamic Organizations	
BUS 420 Seminar in Industrial Relations	

Department of Marketing and Business Law**Pamela Kiecker**

Associate Professor and Chair (1994) BA Carleton College; MBA Mankato State University; PhD 1988 University of Colorado, Boulder

- Cowles, Deborah L. (1986) *Associate Professor of Marketing* BA Ohio Wesleyan University; MA University of Texas, Austin; PhD 1987 Arizona State University
- Daughtrey, William H., Jr. (1972) *Professor of Business Law* BS Hampden-Sydney College; JD 1958 University of Richmond
- Franzak, Frank J. (1986) *Associate Professor of Marketing* BS Virginia Polytechnic Institute and State University; MBA and PhD 1984 University of Maryland
- Griggs, Walter S., Jr. (1971) *Associate Professor of Business Law and Associate Dean for Undergraduate Studies, School of Business* MH and JD University of Richmond; EdD 1979 College of William & Mary
- Little, Michael W. (1983) *Associate Professor of Marketing* BS Western Michigan University; MS and PhD 1978 Michigan State University
- McDermott, Dennis R. (1979) *Associate Professor of Marketing* BBA University of Toledo; MBA and PhD 1973 Ohio State University
- Rasnic, Carol D. (1980) *Professor of Business Law* BA University of Kentucky; JD 1965 Vanderbilt University

- Smith, Alfred L., Jr. (1974) *Assistant Professor of Business Law* BA Virginia Military Institute; JD University of Richmond; LLM 1974 New York University
- Urban, David J. (1989) *Associate Professor of Marketing* BS University of Virginia; MA and PhD 1985 University of Michigan
- Wijnholds, Heiko D. (1979) *Associate Professor of Marketing* Bcom University of Pretoria; MCom and DCom 1970 University of South Africa
- Wood, Van R. (1994) *Professor and Philip Morris Chair of International Business* BA and MBA University of Washington; PhD 1982 University of Oregon

Emeriti Faculty

- Bowles, Donald H. *Associate Professor Emeritus of Marketing* AB Harvard University; MS University of Richmond
- Welzel, Alvin K. *Associate Professor Emeritus of Marketing* BS Rutgers University; MS New York University

Marketing

The major in marketing endows the student with a broad working knowledge of contemporary marketing philosophy and practice. Students can choose from a variety of courses that most closely meet their interests and career aspirations. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, and retailing, among others.

Major Requirements

	<i>Credits</i>
BUS 310 Information for Marketing Decisions	3
BUS 378 International Marketing	3
BUS 476 Marketing Management	3
Select six courses from the following list:	18
	<hr style="width: 20%; margin-left: auto; margin-right: 0;"/> 27
BUS 371 Integrated Marketing Communications	
BUS 372 Product Development and Management	
BUS 373 Buyer Behavior	
BUS 376 Dynamics of Retail Management	
BUS 474 Personal Selling and Sales Management	
BUS 475 Services Marketing	
BUS 478 International Marketing Strategy	
BUS 491 Topics in Business (Marketing Topic)	
BUS 492 Independent Study	
BUS 493 Internship	

Minor in Marketing

The minor in marketing is for business and non-business majors. It recognizes the cross-functional nature of today's business environment and the growing importance of the customer orientation in all organizations, public and private, for-profit and not-for-profit, domestic and global. For non-business majors in particular, the minor in marketing responds to the need for marketing knowledge and skills in a wide variety of organizations and potential career fields. It consists of 18 credit hours of 300- and 400-level marketing courses as follows: BUS 308 Introduction to Marketing, BUS 476 Marketing Management, and 12 credits of approved electives with at least 3 of these 12 credits at the 400-level. All prerequisites to courses must be met. Additional information regarding the minor in marketing can be obtained from the School of Business Office of Undergraduate Studies, Room 3119, or from the Chair of the Department of Marketing and Business Law.

Post-Baccalaureate Certificate in Marketing

This certificate is designed for students who have earned a baccalaureate degree in a field other than marketing who now desire an extensive, current knowledge of marketing. Successful completion of the post-baccalaureate certificate in marketing recognizes the cross-functional nature of today's business environment and the growing importance of the customer orientation in all organizations, public and private, for-profit and not-for-profit, domestic and global. A complete description of the program is given in the *Graduate Bulletin*.

Preparation for the Study of Law

Carol D. Rasnic

Department of Marketing and Business Law, Adviser

Husain Mustafa

Department of Political Science, Adviser

James L. Hague

Department of Criminal Justice, Adviser

Few law schools list specific undergraduate courses as prerequisites for admission. Therefore, the student considering law school may major in virtually any department in the College of Humanities and Sciences or the School of Business. However, students are encouraged to obtain a broad liberal arts background with emphasis on the social sciences and English. The advisers to pre-law students maintain continual contact with law school admissions offices and will assist any interested student who has questions about curriculum, financial assistance, application procedures, or the Law School Admissions Test (LSAT).

Graduate Programs in Business and Economics

The School of Business offers graduate work leading to the degrees of Master of Business Administration, Master of Science in business, Master of Arts in economics, Master of Accountancy, Master of Taxation, and the Doctor of Philosophy in business. These programs prepare candidates for responsible participation in business, industry, government, and education. Details of these programs are presented in the *Graduate Bulletin*, which can be received by writing to the Associate Dean for Graduate Studies, School of Business, Virginia Commonwealth University, 1015 Floyd Avenue, Richmond, VA 23284-4000.

External Affairs

Charles J. Gallagher

Associate Dean for External Affairs

Mary Scott Swanson

Director of Development and Alumni Affairs

The associate dean for external affairs has primary responsibility for coordinating all School of Business

activities that reach out into the community. This office monitors the overall direction of the activities of the Virginia Council on Economic Education; the noncredit aspects of real estate, insurance, and small business programs; and other external activities not directly related to academic degree programs. The director of development assists the School of Business Alumni Association with its activities and programs and coordinates all fund-raising projects for the school.

Alfred L. Blake Chair of Real Estate

This chair, endowed by the Virginia Realtors Foundation, ranks third in the nation in its amount of funding. It provides financial assistance to the endowed chairholder for research and support services. Its purpose is to promote an understanding of real estate operations by offering both credit and noncredit courses.

Employment Support Institute (ESI)

ESI is a research, demonstration, and training center providing technology enhanced decision support and team facilitation. Its mission is "helping people make better decisions about employment options and policies."

ESI creates opportunities for community participants, legislators, advocates, faculty, students, and employers to learn and use decision support technologies related to social service policies. ESI has developed applications focused on options and policies affecting persons with disabilities.

ESI provides decision support to help people navigate employment support benefits and to improve related policy and legislation.

Information Systems Research Institute

The mission of the institute is to develop partnerships between the School of Business and the information systems professionals in the Richmond business community. The institute provides a diversity of services through such activities as continuing professional education seminars, presentations, and workshops by information systems faculty and via satellite teleconferencing. In addition, the institute conducts sponsored research projects; provides consulting and technical assistance; and investigates the application of new technologies.

Insurance Studies Center

This program educates and promotes awareness in the areas of risk management, insurance, and financial services, and also offers academic and professional programs in conjunction with area insurance professionals.

Interactive Marketing Institute (IMI)

IMI is a research and training center for marketing studies housed in the Department of Marketing and Business Law. The institute provides a comprehensive set of marketing services for faculty, students, businesses, and not-for-profit agencies, which includes a full range of research services, presentations, continuing professional educational seminars, and workshops. Most

notably, the IMI sponsors the Professional Direct Marketing Certification Program, a comprehensive, modular program of instruction and practice for advanced marketing professionals.

Small Business Development Program

Participating students in this program consult, counsel, and research problems of a particular business. Students are encouraged to design extensive plans to implement their solutions.

Virginia Council on Economic Education

The council encourages and promotes a better understanding of economics and the American economy among Virginia school administrators, teachers, community leaders, and the general public. VCU is one of nine statewide centers on economic education.

Virginia Family Business Forum

The Forum addresses many of the unique problems encountered by family firms. It provides family business owners and key personnel with valuable information and timely educational programs in a practical, usable format in an atmosphere that allows for interaction with similar firms.

The Forum offers three seminars per year featuring leading experts and family business owners who address current issues of importance to family firms. It provides business owners the opportunity to benefit from the experiences of their peers.

The Forum also holds quarterly educational breakfast meetings and publishes a quarterly newsletter.

Virginia Labor Studies Center

The Virginia Labor Studies Center is committed to developing leadership for the improvement of labor-management relationships in the Commonwealth. The center endeavors to develop an improved public perception of labor-management relations and improve productivity through more advanced labor-management relations.

The planning and administering of its various outreach efforts are done through work with both the labor and management community as well as other interested organizations and individuals. The center assists both labor and management in developing research and education programs.

Virginia Real Estate Center

The center provides information on current market trends to educators, real estate professionals, and the general public. The center conducts extensive research on land developing, real estate marketing and financing and home and business construction. It also publishes quarterly and annual reports summarizing its findings that are available to the public.

Finally, the center seeks innovative ideas of improving future real estate markets.

Course Descriptions

Courses in Accounting

BUS 202 Accounting for Non-Business Majors. Semester course; 3 lecture hours. 3 credits. A nontechnical introduction to the principles of financial and managerial accounting with emphasis on the use and interpretation of financial reports, managerial planning and control. The course is for the individual who seeks a basic knowledge of accounting and its uses. It is designed for the user of accounting information rather than the preparer. The course is open only to non-business students. This course cannot be substituted for BUS 203,204, or 205.

BUS 203-204 Introduction to Accounting. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 141 or equivalent. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation, and uses of accounting information.

BUS 205 Introductory Accounting Survey. Semester course; 3 lecture hours. 3 credits. An accelerated course covering theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation, and uses of accounting information. Restricted to students in the Post-Baccalaureate Certificate in accounting program. May not be counted toward any of the BS programs offered by the School of Business.

BUS 303-304 Intermediate Accounting I and II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: BUS 160, 161, 162 or equivalent competency, BUS 204, and junior standing. Grade of "C" or higher in BUS 303 is required to take BUS 304. Theoretical standards and procedures for accumulating and reporting financial information about business. Classification, valuation, and timing involved in determination of income and asset/equity measurement.

BUS 305 Tax Planning for Individuals. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 203. Not open to accounting majors. Credit will not be given for both this course and BUS 405. A general course in tax accounting concepts and procedures for students with a minimum of previous work in accounting. Emphasis is on aspects of taxation affecting the individual: federal and state income, estate, inheritance, gift, excise, and payroll taxes; fundamentals of tax planning.

BUS 306 Cost Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 160, 161, 162 or equivalent competency, BUS 204, and junior standing. Cost accumulation for inventory pricing and income determination. Cost behavior concepts for planning and control. Job order and process cost systems, standard costs, budgets, and special topics in relevant costs for managerial decisions.

BUS 307 Accounting Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 160, 161, 162 or equivalent competency, BUS 204, and junior standing. Examines design and evaluation of manual and computerized accounting information systems. Emphasis on the system of internal controls and the impact of computers on those controls.

BUS 401 Governmental and Not-For-Profit Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 303-304, grade of "C" or higher in BUS 304, and junior standing. The role of accounting in the management of resources entrusted to government and nonprofit entities, including accounting and reporting standards. Accounting in municipalities and nonprofit entities such as hospitals, charitable and health organizations, and colleges and universities.

BUS 404 Advanced Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisites: Grade of "C" or higher in BUS 304 and junior standing. Financial accounting for complex business relationships, including home office-branch accounting, business combinations, consolidated financial statements, partnerships, and governmental funds.

BUS 405 Tax Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 161, 162 or equivalent competency, BUS 204, and junior standing. Income tax legislation and the concept of taxable income; federal income tax law applicable to individuals.

BUS 406 Auditing. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301, grade of "C" or higher in BUS 304 and 307, and junior standing. A study of the conceptual, theoretical, and practical procedures applicable to auditing – both external and internal. Primary emphasis is placed upon the theory of audit evidence; the objectives, techniques, and procedures for financial and operational audit reports.

BUS 407 Advanced Auditing. 3 lecture hours. 3 credits. Prerequisites: BUS 406 and junior standing. An in-depth analysis of advanced topics in auditing. Topics include statements on auditing standards, unaudited statements, advanced statistical sampling applications, and auditing in computer environments. Emphasis is given to preparing students for the auditing section of the CPA examination.

BUS 410 Advanced Tax Accounting. 3 lecture hours. 3 credits. Prerequisites: BUS 405 and junior standing. Complex tax problems of the trust, partnership, and corporation. Particular emphasis is given to tax planning.

BUS 411 Accounting Opinions and Standards. Semester course; 3 lecture hours. 3 credits. Prerequisites: Grade of "C" or higher in BUS 304 and junior standing. A technical course concerned with pronouncements of the public accounting profession. The course objective is to familiarize students with present and proposed accounting opinions and standards.

BUS 481-482 Law for Accountants I and II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: Senior accounting major or permission of instructor. Provides detailed examination of laws that are of particular importance to accountants, along with ethical considerations and social and political influences. First semester: contracts, sales, agency, commercial paper, secured transactions, and bankruptcy. Second semester: security regulations, antitrust, partnerships, corporations, suretyship, insurance, wills, and trusts. Students may not receive degree credit for BUS 481-482 and for BUS 323-324.

BUS 491 Topics in Business (Accounting Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

Courses in Business Math and Statistics

BUS 171 Mathematical Applications for Business. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 162 or basic spreadsheet knowledge and MAT 141 or equivalent. (Equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test.) Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, basic probability, creation of decision alternatives in the face of uncertainty. A spreadsheet will be used throughout as a calculation and graphing tool.

BUS 212 Differential Calculus and Optimization for Business. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 171. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. A spreadsheet will be used as a calculation tool.

BUS 301-302 Business Statistics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: BUS 212. Statistical methods employed in

the collection and analysis of business and economic data and applications in decision-making. First semester: statistical thinking, concepts of variability, process studies, data collection, descriptive measures, probability, and introduction to statistical inference. Second semester: continuation of statistical inference, regression, and correlation analysis with emphasis on problem formulation and interpretation. Students may not receive degree credit for both BUS 301 and STA 210.

Courses in Computer Software Packages

BUS 160 Introduction to Windows/DOS-Based Operating Systems. Five-week course; 1 lecture hour. 1 credit. Familiarizes students with basic computer terminology and concepts and introduces them to a microcomputer environment. Topics include the history of computers, an introduction to hardware and software, computer applications, and hands-on experience on a windows-based microcomputer system. This course requires no prior knowledge of computers, and it provides the necessary foundation for introductory computer programming and applications courses.

BUS 161 Introduction to Microcomputer-Based Word Processing Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisites: BUS 160 or equivalent knowledge. Introduces students to fundamental use of microcomputer-based word processors. Topics include word wrap, indentation, font selection, point size, bolding, indenting, underlining, spacing, and block commands. The course will help students prepare documents and papers that other VCU course work may require. Students may not receive degree credit for both CSC 198 and BUS 161.

BUS 162 Introduction to Microcomputer-Based Spreadsheet Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisite: BUS 160 or equivalent knowledge. Introduces students to fundamentals of spreadsheet processing on the microcomputer. Topics include the entering of text, numbers, and formulas, formatting, moving, copying, recalculation, graphing, retrieving, saving, and printing. The course will help students prepare financial analyses and products other VCU course work may require. Students may not receive degree credit for both CSC 198 and BUS 162.

BUS 164 Introduction to the Internet. Five-week course; 1 lecture hour. 1 credit. Introduces students to accessing and using the Internet. Students will be provided with a history of the Internet, the tools available, information on accessing the Internet from school and at home. World Wide Web browsers, ftp, e-mail, telnet, and other tools will be introduced.

BUS 165 Intermediate Microcomputer-Based Spreadsheet Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisite: BUS 162 or equivalent. Familiarizes students with the creation and use of macros, menu building, and package building. Students are introduced to the use of database functions and the creation of tables from databases. This course is designed for those students with some prior experience with computer-based spreadsheet packages.

BUS 166 Introduction to Microcomputer-Based Database Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisite: BUS 160 or equivalent knowledge. Provides hands-on experience with a selected popular database management package in the personal computer market.

BUS 167 Introduction to Microcomputer-Based Statistical Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisite: BUS 160 or equivalent knowledge. Familiarizes students with the application of microcomputer-based statistical packages. The course includes hands-on experience using a set of raw data for analysis in support of business decisions and research.

BUS 168 Introduction to Microcomputer-Based Presentation Packages. Five-week course; 1 lecture hour. 1 credit. Prerequisite: BUS 160 or equivalent knowledge. Familiarizes students with the application of microcomputer-based presentation packages. The course will help students to prepare presentations and products other VCU course work may require.

Courses in Economics

ECO 101 Introduction to Political Economy. Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues, tax policy, inflation expectations, unemployment, foreign trade, and the effectiveness of fiscal and monetary policies.

ECO 203 Introduction to Economics. Semester course; 3 lecture hours. 3 credits. A survey of economic principles, institutions, and problems. The course is designed to provide basic economic understanding for students who do not expect to major in economics or in the School of Business. (No degree credit for economics and business majors.)

ECO 210-211 Principles of Economics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 001 or satisfactory score on the Mathematics Placement Test. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy. First semester: Microeconomics. Second semester: Macroeconomics.

ECO 301 Microeconomic Theory. I 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. Analysis of the principles that govern production, exchange, and consumption of goods and services. Topics include demand analysis, production and cost theory, price and output determination, theory of markets, and distribution theory.

ECO 302 Macroeconomic Theory. II. 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. A general survey of national income analysis and macroeconomic theory. Detailed study of public policies affecting price levels, employment, economic growth, and the balance of payments.

ECO 303 Managerial Economics. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211, BUS 212 or MAT 200, and junior standing. Application of tools of economic analysis to allocation problems in profit and nonprofit organizations. Models for evaluating revenue, production, cost, and pricing will be presented. Emphasis on developing decision rules for turning data into information for solving problems.

ECO 305 Public Finance - State and Local. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210, or ECO 203, and junior standing. An economic analysis of state and local government budgeting, revenue sources, and expenditures.

ECO 306 Public Finance - Federal. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210, or ECO 203, and junior standing. An economic analysis of the fiscal decision process, revenue sources, and expenditures at the federal level.

ECO 307 Money and Banking. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211, or ECO 203, and junior standing. A study of money, financial markets, and the financial structure with emphasis on commercial banks and the Federal Reserve System. Relationships between economic activity and money supply are introduced.

ECO 313 Economics of Transportation. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210, or ECO 203, and junior standing. An economic analysis of the transportation industry with special emphasis on regulation, public policy, and urban transportation.

ECO 315/AAS 315 Economic Development. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210, or ECO 203, and junior standing. Introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean, and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development.

ECO 321/USP 321 Urban Economics. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210, or ECO 203, and junior stand-

ing. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas.

ECO 325 Environmental Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The application of economic analysis to externalities such as air and water pollution, pesticide control, land use planning and other environmental issues. The role of cost/benefit analysis in the decision-making process is developed. Efficiency and equity issues are evaluated.

ECO 329 International Economics. II. 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates, and international monetary systems.

ECO 401 Introduction to Econometrics. I 3 lecture hours. 3 credits. Prerequisites: ECO 210-211, BUS 301 or STA 210, and junior standing. Sources and uses of economic data; includes the application of statistical methods and regression analysis to time series and cross-section data to test hypotheses of micro- and macroeconomics.

ECO 402 Business Cycles and Forecasting. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. An examination of repetitive variations in business activity. The measurement and analysis of economic fluctuations and how they affect the business environment. Stresses modern forecasting techniques.

ECO 403 Introduction to Mathematical Economics. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 212 or MAT 200, ECO 210-211, and junior standing. The application of mathematical techniques to economic theory and economic models.

ECO 419/HIS 333 History of Economic Thought. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth, and distribution from the eighteenth through the twentieth centuries will be presented.

ECO 421 Government and Business. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. The application of economic analysis to the behavior of business, industry, and government regulation. Topics include the causes and exercise of monopoly power, antitrust enforcement, public utilities, and industry studies.

ECO 431 Labor Economics. II. 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 and junior standing. Analysis of labor markets and institutions to gain an understanding of the process of wage and employment determination. Both historic and current topics are included.

ECO 489 Senior Seminar in Economics. II. 3 lecture hours. 3 credits. Prerequisites: ECO 301 and 302 or permission of instructor. Papers on current research of enrolled students, faculty, and guests. Analysis of economic theory and problems on advanced-level.

ECO 491 Topics in Economics. Semester course; variable credit. Maximum of three credits per topics course; maximum total of six credits for all topics courses. Prerequisite: Junior standing. An in-depth study of a selected economic topic, to be announced in advance.

ECO 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as an economics major, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

ECO 493 Internship in Economics. Semester course; The student is expected to work at the site 15-20 hours per week. 3 credits. Prerequisites: Junior standing; a minimum of 3.0 GPA in economics courses; at least 15 economics credits; and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during registration for semester of credit. The internship is

designed to give students practical experience in an appropriate supervised environment in the public or private sector.

Courses in Finance and Insurance/Risk Management

BUS 311 Financial Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 204 (or BUS 202 for non-business majors) and junior standing. Pre or corequisite: BUS 301. Principles of optimal financial policy in the procurement and management of wealth by profit-seeking enterprises; the application of theory to financial decisions involving cash flow, capital structure, and capital budgeting.

BUS 312 Intermediate Financial Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 302, BUS 311, and junior standing. Advanced topics in financial management with emphasis on the theoretical bases for the valuation of the firm.

BUS 313 Financial Management for Small Business. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 311 and junior standing. This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

BUS 314 Investments. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301 and BUS 311, or permission of chair, and junior standing. An analysis of the market for long-term corporate securities. Emphasis is given to the valuation of bonds, common stocks, options, and convertible securities and portfolio concepts. Designed to provide an understanding of the functioning of an efficient market.

BUS 315 Personal Financial Planning. Semester course; 3 lecture hours. 3 credits. Designed to assist households and those providing financial services and advice to households in making complex financial decisions. Units include income and expenditure, credit, borrowing, banking, savings, insurance, home buying, investment, and estate planning.

BUS 330 Regulatory Aspects of Safety and Risk Control. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Examines political, scientific and social concepts of risk that influence the regulation of certain societal hazards and threats. Includes a survey of federal and state laws, regulations and standards that impact upon employment, the environment, industrial security, consumer protection, and occupational safety and health.

BUS 332 System Safety. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Addresses the concepts and practices of system safety; included are basic system concepts, application of system safety techniques, qualitative and quantitative applications such as fault-free, failure-mode-and-effects, MORT, and cost-benefit analyses.

BUS 333 Risk and Insurance. Semester course; 3 lecture hours. 3 credits. Nature of risk; insurance and other risk handling methods; insurance as an institution; examination of basic life, health, property, and liability principles and coverages.

BUS 334 Incident Investigation and Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Reviews various conceptual and analytical models used in accident/incident investigation strategies and reporting systems, report formats, data collection methods, causal inferences, problem identification, and data analysis; in-depth case studies and epidemiological reviews of recent events will be emphasized.

BUS 335 Hazardous Materials Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: CHE 103, CHE L103, and junior standing. A survey of the nature and characteristics of hazardous materials; covers control technologies, transportation and storage methods, compatibility of multiple materials, waste disposal, and the protection of personnel; emphasis given to federal and state hazard communication and right-to-know legislation and trends.

BUS 413 Comparative Financial Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 311 and junior standing. An analysis of the structure and functioning of financial systems in different parts of the world. Emphasis is on the evolution of such systems in

relation to the U.S. financial system. Different regions of the world may be studied in different semesters.

BUS 414 Security Analysis and Portfolio Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 302, BUS 314, and junior standing. A detailed analysis of stocks and bonds as well as options and futures. Emphasis is on models for portfolio selection, revision, and performance evaluation.

BUS 416 International Financial Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 311 and junior standing. Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment.

BUS 417 Cases in Financial Management. 3 lecture hours. 3 credits. Prerequisites: BUS 311 and junior standing. Cases involving financial decisions for various forms of business enterprises.

BUS 424 Property and Liability Insurance. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 333, or permission of instructor, and junior standing. Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity, and surety bonds.

BUS 426 Life and Health Insurance. 3 lecture hours. 3 credits. Prerequisite: Junior standing. The function, nature, and uses of life and health insurance and annuities; operational aspects of life insurance companies. Full-time students who pass this course can receive credit for the CLU HS323 examination from the American College. See instructor for details.

BUS 428 Employee Benefit Planning. Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability, and retirement plans. New developments in employee benefits, plan design, administration, cost, funding, regulation, and tax considerations.

BUS 430 Social Insurance. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Societal and individual financial problems encountered as the result of disability, unemployment, aging, and death. Insurance solutions through governmental and private techniques.

BUS 432 Insurance Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The legal concepts and doctrines applicable to insurance. Fundamental legal aspects of life, health, property, and liability insurance.

BUS 437 Funds Management in Financial Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 311 and junior standing. Funds management techniques for selected financial institutions including investment companies (mutual funds), life and casualty insurers, savings and loans, mutual savings banks, commercial banks, pension funds.

BUS 444 Occupational Safety, Health, and Security. Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health, and security. Causes of workplace health hazard exposures, accidents, and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health, and workplace security programs are studied to facilitate understanding and application in the workplace.

BUS 455 Options, Futures, and Swaps. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 312, or 314, and junior standing. Analysis and valuation of speculative securities and markets, including options, futures, and swaps with emphasis on their use for hedging and speculative purposes. Major valuation models and term structure models are discussed with applications to problems in finance considered.

BUS 491 Topics in Business (Finance Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

Courses in General Business

BUS 121 The Business Environment. Semester course; 3 lecture hours. 3 credits. Concepts and issues in contemporary business. (Not open to juniors and seniors in the School of Business.)

BUS 291 Topics in Business. Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. The election to use the pass/fail grading option is at the discretion of the offering department.

Courses in Information Systems

BUS 258 Visual Basic Programming. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 160 or equivalent. Introduces students to Visual Basic programming in the Windows environment. Concepts of structured and Object Oriented programming are introduced.

BUS 358 Structured and Object Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 258 or equivalent. Pre or corequisite: BUS 362. Introduction to computer programming using C++ language, including classes and data types, logic constructs, file operations, object building, algorithms and program development, and program testing.

BUS 359 Advanced Structured and Object Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 358 and junior standing. An advanced programming course using C++, giving special attention to techniques for program and object design and the evaluation and selection of data structures and algorithms using the standard template library.

BUS 360 Business Information Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 160, BUS 161, BUS 162, or equivalent knowledge and sophomore standing. Provides an understanding of the importance of computer-based information in the success of the firm. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support, and management information systems.

BUS 361 Systems Analysis and Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 360 and junior standing. Examines the concepts, tools, and techniques used to develop and support computer-based information systems. Systems planning, analysis, design, and implementation are covered. Behavioral and model building aspects of systems development are emphasized throughout.

BUS 362 Computer Hardware and Software. Semester course; 3 lecture hours. 3 credits. Pre or corequisite: BUS 258 or equivalent. Principles of computer hardware and software architecture, organization, and operation. Basic concepts are introduced via assembly language programming.

BUS 363 COBOL Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 258, or BUS 358 or equivalent, or permission of instructor, and junior standing. Introduction to the basic concepts of computer program design using the COBOL programming language, including data structures, fundamental operations on data structures, and algorithmic structures.

BUS 366 Computerware Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 362 and junior standing. Surveys the performance characteristics of representative computer and related software systems, of communications systems, and of peripheral equipment that may be considered in systems design and for installation planning.

BUS 461 Information Systems Planning. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 358, BUS 361, and junior standing. Concentrated study of planning methods and techniques required for defining, planning, integrating and implementing information technology projects consistent with the organizational strategic plan and mission.

BUS 462 Windows Programming in C++. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 359, BUS 361, and junior standing. Focuses on using the Microsoft Foundation Classes to develop Windows object-oriented applications. Addresses the relationship between these classes and the Windows 32-bit API. Message handling, multi-threaded programming, serialization, the component object model, and ActiveX components are also covered.

BUS 463 Reengineering Technology in Organizations. Semester course; 3 lecture hours. 3 credits. Pre or corequisites: BUS 461, permission of the instructor, and junior standing. A survey of legacy system reengineering technologies in which the student becomes familiar with a variety of tools used in practice and has the opportunity to develop applications using these tools under supervision. Selection of technologies is determined each semester.

BUS 464 Database Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 358, BUS 361, and junior standing. Designed to prepare students for development of systems involving databases and database management.

BUS 465 Projects in Information Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 361, BUS 464, and junior standing. The student's behavioral and technical skills developed in BUS 361 and BUS 464 are challenged by participating in a team systems development project. Appropriate computer assisted software engineering (CASE) tools are used throughout the project, from requirement specification to implementation and testing.

BUS 466 Applications Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 363 and junior standing. Covers development of typical data processing programs in COBOL. Includes job control language, debugging, random access files, and other subjects necessary for the implementation of applications programs.

BUS 467 Distributed Data Processing and Telecommunications. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 358, 361, 362, and 470 or equivalent, and junior standing. Technology and concepts of telecommunications and distributed processing including managerial concerns and interests, hardware, systems design, and operation factors.

BUS 468 Information Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 461, BUS 463 and junior standing. A study of information engineering as a model-based, data-centric approach to integrating organizational strategic planning with enterprise information systems development. Involves readings, group discussion, and case studies.

BUS 469 Information and Decision Systems in Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 464 or permission of instructor, and junior standing. The ways in which information and decision system technologies affect the management of complex organizations. Emphasis on the impact of computer-aided decision and control processes on planning, financial, production, marketing, and other subsystems.

BUS 470 Local Area Networks. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 361, BUS 362, or permission of the instructor, and junior standing. Provides an introduction into design, implementation, and management of Local Area Networks (LAN's) and the integration of LAN's into wide-area corporate enterprise networks. A case-study orientation is used throughout to emphasize design options in practical situations.

BUS 491 Topics in Business (Information Systems Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

Courses in Law

BUS 323 Legal Environment of Business. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Basic legal concepts applicable to business, including the legal aspects of operating a business, contracts, employment relationships, sales, bailments, and commercial paper, along with ethical considerations and social and political influences. Students may not receive degree credit for both BUS 323 and BUS 481.

BUS 324 Legal Aspects of the Management Process. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 323, or permission of instructor, and junior standing. Legal aspects of partnerships and corporations; management rights, powers, and responsibilities. Students may not receive degree credit for both BUS 324 and BUS 482.

BUS 326 Real Estate Law. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 323, or equivalent, or permission of instructor, and junior standing. Legal fundamentals of real estate including contracts, concepts of title, title examination, easements, conveyances, liens, and recording statutes.

BUS 350 Tort Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Basic concepts of tort law with emphasis on intentional torts, negligence, causation, proximate cause, strict liability, nuisance, tortious interference with contract rights, misrepresentation, defamation, and privacy.

BUS 427 Labor and Employment Relations Law. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 323, or permission of instructor, and junior standing. A survey of legislation and court and administrative body decisions affecting the employer/employee relationship.

BUS 432 Insurance Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The legal concepts and doctrines applicable to insurance. Fundamental legal aspects of life, health, property, and liability insurance.

BUS 481-482 Law for Accountants I and II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: Senior accounting major or permission of instructor. Provides detailed examination of laws that are of particular importance to accountants, along with ethical considerations and social and political influences. First semester: contracts, sales, agency, commercial paper, secured transactions, and bankruptcy. Second semester: security regulations, antitrust, partnerships, corporations, suretyship, insurance, wills, and trusts. Students may not receive degree credit for BUS 481-482 and for BUS 323-324.

Courses in Management

(Including entrepreneurship, general, human resource, and production/operations)

BUS 319 Organizational Behavior. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Introduction to the determi-

nants and consequences of human behavior and task performance in an organizational setting. Topics include motivation, job design, group development, organizational design, communication, leadership, and change.

BUS 320 Production/Operations Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301, BUS 319, and junior standing. Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management, and quality management.

BUS 325 Organizational Communication. Semester course; 3 lecture hours. 3 credits. Prerequisites: ENG 101-200 and junior standing. A study of writing for interpersonal, group, and organizational communication, including the preparation of standard business documents.

BUS 327/ENG 327 Business and Technical Report Writing. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Development of critical writing skills used in business, science, technology, and government, including instructions, descriptions, process explanations, reports, manuals, and proposals. The course will include such topics as communication theory, technical style, illustrations, formats for proposals, reports, and manuals.

BUS 329 Introduction to Intercultural Communication. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. An introduction to the basic concepts, principles, and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process, and nonverbal communication aspects. Appropriate for business and non-business majors.

BUS 331 Human Resource Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Basic problems of employment, selection, and placement; employee rating systems of a diverse workforce, and management of diversity through recognition of employee uniqueness and positive contributions of various cultures to the organization culture; wage levels and methods; job studies and descriptions; training methods and programs.

BUS 339 Management Science. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301 and junior standing. Concepts and techniques of management science as they apply to solving business problems, with a focus on applications. Includes linear programming, transportation method, PERT/CPM, queuing models, and simulation.

BUS 346 Technical Systems for Staff and Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Study of office automation systems that enhance the productivity of employees at all levels: managerial, professional/technical, and administrative services. Interrelatedness and integration of word, data, voice, and image processing for managing and channeling information are emphasized. Key concepts related to the interaction of people, processes, and technologies are examined.

BUS 385 Production/Operations Management II. Semester course; 3 lecture hours. 3 credits. Pre or corequisites: BUS 320 or permission of the instructor, and junior standing. Analyzes operations in organizations through consideration of product and process design, location, layout, job design, work measurement, productivity, scheduling, and maintenance.

BUS 386 Logistics and Physical Distribution. Semester course; 3 lecture hours. 3 credits. Pre or corequisites: BUS 320 or permission of the instructor, and junior standing. Introduction to the logistics function and its analysis. Topics include the logistics environment, facility design and location, production scheduling, transportation and distribution analysis. Emphasis is on decision analysis and its management implications.

BUS 418 International Management. II. 3 lecture hours. 3 credits. Prerequisite: Junior standing. Management attitudes and concepts of other nations, cultures, or geographic regions compared with the United States.

BUS 419 Managing Dynamic Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 320 and junior standing. The application of macro organization theory to organization design. The design of structure and process to improve effectiveness. Relationships between technology and structure; strategy and environment; power and politics; culture and organization; and growth, decline, and revival.

BUS 420 Seminar in Industrial Relations. 3 lecture hours. 3 credits. Prerequisites: BUS 331, or permission of instructor, and junior standing. Managerial decision-making in labor management relationships; the collective bargaining process and the administration of labor agreements; the impact of public policy and labor legislation.

BUS 421 Small Business Management. Semester course; 3 lecture hours. 3 credits. The importance, problems, and requirements of small businesses; establishing policies for prices, promotion, control, and credit; regulations, taxes, records, and record keeping.

BUS 422 Managing the Family Firm. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 421 or permission of instructor, and junior standing. Students are expected to develop specific strategies and approaches to enhance the effectiveness of the family firm. Designed for members of family firms as well as those who will be working in or providing goods or services for family enterprises. Topics include succession strategies; management and strategic planning; ownership issues; taxes—transfer, gift, and estate; professionalizing the family firm; boards of directors in the family firm, family business growth, psychological issues, change and conflict in the family business; family relations; women in the family firm; the younger generation; consulting and education for family business; family business in society; global and ethnicity issues in family business; culture and values.

BUS 427 Labor and Employment Relations Law. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 323, or permission of instructor, and junior standing. A survey of legislation and court and administrative body decisions affecting the employer/employee relationship.

BUS 428 Employee Benefit Planning. Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability, and retirement plans. New developments in employee benefits, plan design, administration, cost, funding, regulation, and tax considerations.

BUS 433 Compensation Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 331 and junior standing. The methods and techniques of obtaining job descriptions, job characteristics and measuring scales, job rating, and the awarding of wage increments.

BUS 434 Strategic Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in a School of Business major and completion of all School of Business core courses. Integrative course to analyze policy issues at the overall management-level, involving functional areas such as production, finance, and marketing, in context with the economic, political, and social environment.

BUS 435 Strategic Human Resource Management. 3 lecture hours. 3 credits. Prerequisites: BUS 331, or permission of instructor, and junior standing. A critical study of selected problems in human resource management.

BUS 436 New Venture Initiation. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 421, or permission of instructor, and junior standing. Students engage in the development of a comprehensive business plan. Various strategies for success are explored and factors in entrepreneurial competency are discussed.

BUS 439 Quality I. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301, or STA 212 and permission of instructor, and junior standing. Quality concepts and tools with a focus on the use of statistical thinking in leading organizations; collection and use of data to direct actions for improvement; introduction to analytic studies; the role of process stability; statistical tools for assessing stability and improving processes.

BUS 440 Forecasting Methods and Process. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 302, or equivalent, and junior

standing. An application-oriented presentation of forecasting process and forecasting methods to support planning and decision making. Statistical forecasting methods are emphasized, including exponential smoothing, decomposition, and regression. Also includes experience with computer software.

BUS 441 Production Planning and Control Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 320, BUS 339, and junior standing. Production planning and control systems, focusing on manufacturing firms. Topics covered include forecasting, statistical inventory control, material requirements planning, and aggregate production planning.

BUS 446 International Human Resource Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 331. Covers the application of human resource management activities in an international environment. Similarities and differences in domestic methods are highlighted to aid understanding. Contemporary practices in the selection, development, compensation, and maintenance of expatriates, impatriates, repatriates, host country nationals, and third-country nationals are studied. Regulatory and cultural dimensions of countries are examined.

BUS 447 Human Resource Information Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 331 and BUS 360 or permission of instructor. Covers contemporary human resource information software used in the primary activities of human resource management involving recruitment, selection, performance appraisal, employee benefits, pay administration, safety and health, human resource development, job analysis, human resource planning, and job structuring. Emphasis is on introducing the software and practical application through hands-on experience in the computer laboratory.

BUS 483 Purchasing and Materials Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 320, or permission of the instructor, and junior standing. An application oriented course dealing with effective management of the supply function in an organization. Current management trends toward world class competitiveness, elimination of waste, total quality (in purchasing management), MRP, and reverse marketing are among the topics covered in this course.

BUS 489 Managerial Applications and Skills Development. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 319-320 and senior standing or permission of instructor. Application, testing, and critical analysis of management theories, concepts, and skills. Team building and organizational culture assessment.

BUS 491 Topics in Business (Management Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

Courses in Marketing

BUS 308 Introduction to Marketing. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211 (or ECO 203 for non-business majors) and junior standing. An introduction to the activities involving the exchange of goods, services, and ideas for the satisfaction

of human wants. Marketing is examined as it relates to the other functions of the organization, to consumers, and to society.

BUS 310 Information for Marketing Decisions. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 301, BUS 308, and junior standing. Students receive an overview of the marketing research process. The course includes coverage of primary research, secondary data sources, and marketing information systems. Students learn to apply research findings to marketing decisions.

BUS 371 Integrated Marketing Communications. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308, or permission of chair, and junior standing. Overviews the various steps in the development of an integrated marketing communications program, including advertising, public relations, sales promotion, personal selling and direct marketing. Special emphasis is placed on the role of new technologies and interactive media in this context.

BUS 372 Product Development and Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 210-211, BUS 308, and junior standing. Study of price theory and policy relevant to goods and services. Introduction to basic product strategy, focusing on new product development, management of existing products, and elimination of marginal offerings. Various concepts will be addressed including product differentiation, the product life cycle, product design packaging, branding, positioning, and related concepts.

BUS 373 Buyer Behavior. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308 and junior standing; PSY 101 and SOC 101 recommended. Study of the relevant psychological, sociological, and anthropological variables that shape buyers' activities and motivations in household and organizational decision making. Throughout the course, students consider the issue of why consumers behave as they do in the marketplace and the nature of their choices as individual, family, and institutional buyers.

BUS 376 Dynamics of Retail Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308 and junior standing. A comprehensive view of retailing and an application of marketing concepts in a practical retail managerial environment. Students learn to evaluate retail firms and to identify their strengths and weaknesses.

BUS 378 International Marketing. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308, or permission of chair, and junior standing. This course is designed to orient students toward global marketing and to develop an understanding of the differences among foreign marketing environments. Subject areas emphasized are the differences and similarities between domestic and international marketing and changes in the international marketing environment. This course also introduces students to international marketing policies.

BUS 474 Personal Selling and Sales Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 308. Restricted to senior-level business majors or to students having permission of the department chair. Examines the fundamental nature of personal selling in the promotion mix, including the sales process and the techniques used in performing the selling function. Explains the diverse decisions and the activities necessary to manage the outside sales force efficiently and effectively to achieve the organization's overall goals.

BUS 475 Services Marketing. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308 or permission of the instructor, and junior standing. Students develop both a theoretical and practical understanding of "the service product," including the role of customer service in retail and industrial settings. Students learn techniques for analyzing and improving service system design. Students develop an understanding of "quality" as it relates to service products, and they exercise a number of approaches for assessing and improving perceived service quality.

BUS 476 Marketing Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: Restricted to senior-level marketing majors who have completed a minimum of 15 credits of marketing courses (in addition to BUS 308). A case course requiring the senior marketing student to apply his or her knowledge to the solving of marketing managerial problems.

BUS 478 International Marketing Strategy. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 308, or permission of the department chair, and junior standing. This course offers students the opportunity for an in-depth study of marketing strategy in a particular region of the world. Reference will be made to the trade problems experienced by U.S. companies exporting to and importing from the region. Recent changes in the international business environment will also be discussed.

BUS 491 Topics in Business (Marketing Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

Courses in Real Estate

BUS 316 Principles of Real Estate. Semester course; 3 lecture hours. 3 credits. Principles and practices of real estate development, financing, brokerage, appraisal, legal instruments, and governmental land use influences.

BUS 317 Real Property Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Real property economics and planning, marketing, and management of leased properties.

BUS 318 Real Estate Negotiating. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Introduces principles and techniques of negotiating in the marketing and financing of real estate.

BUS 326 Real Estate Law. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 323, or equivalent, or permission of instructor, and junior standing. Legal fundamentals of real estate including contracts, concepts of title, title examination, easements, conveyances, liens, and recording statutes.

BUS 423 Real Estate Brokerage. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Considers administrative principles and practices of real estate brokerage, financial control and marketing of real property.

BUS 425 Real Estate Appraisal. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing or permission of Associate Dean for Undergraduate Studies. Designed for persons who have completed a course in principles of real estate or its equivalent, or have experience in the real estate field. Topics include neighborhood and site analysis using cost, market, and income approaches.

BUS 429 Real Estate Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Instruments, techniques, and institutions of real estate finance; the mortgage market; financing process; mortgage risk analysis; creative financing; emphasis on policies and procedures used in financing residential and commercial properties.

BUS 431 Advanced Real Estate Appraisal. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 425 and junior standing or permission of Associate Dean for Undergraduate Studies. Provides a comprehensive study of the principles and concepts underlying the income approach to investment property appraisal and the mathematics of yield capitalization.

BUS 491 Topics in Business (Real Estate Topic). Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

BUS 492 Independent Study. Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

BUS 493 Internship. Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Involves students in a meaningful experience in a setting appropriate to the major. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. At the option of the department, this grade may be graded on a pass/fail basis.

XIII

PART

School of Dentistry

Lindsay M. Hunt, Jr.

Professor of General Practice and Dean (1985) BA 1961 University of Oklahoma; DDS 1965 and PhD 1971 Baylor University

James H. Revere, Jr.

Assistant Professor of Orthodontics and Executive Associate Dean (1968) BA 1961 University of Richmond; DDS 1965 Medical College of Virginia

Marshall P. Brownstein

Associate Professor of Pediatric Dentistry and Assistant Dean for Admissions and Student Affairs (1975) BS 1963 and DDS 1967 University of Maryland

Thomas C. Burke

Assistant Dean for Development and Continuing Education (1986) BS 1978 and MS 1995 Virginia Commonwealth University

Betsy A. Hagan

Associate Professor of General Practice and Assistant Dean for Clinical Affairs (1980) BS 1974 Virginia Polytechnic Institute and State University; DDS 1978 Medical College of Virginia of Virginia Commonwealth University; MBA 1984 Virginia Commonwealth University

James E. Hardigan

Associate Professor and Assistant Dean for Administrative Affairs (1975) BS 1968 and MBA 1970 Northeastern University; PhD 1975 Cornell University

Harvey A. Schenkein

Professor of Periodontics and Microbiology and Immunology and Assistant Dean for Research (1978) BA 1970, DDS 1974 and PhD 1978 State University of New York

The School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the MCV School of Dentistry.

In 1968, by an act of the Virginia General Assembly, the Medical College of Virginia was merged with Richmond Professional Institute to form Virginia Commonwealth University. The School of Dentistry is located on the Medical College of Virginia Campus.

The facilities of the School of Dentistry are housed in the Wood Memorial and Lyons Buildings and contain clinical facilities, research facilities, classrooms, student laboratories, departmental offices, and a computer learning laboratory. The laboratories and classrooms contain closed circuit television receivers.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favor-

able conditions and in accordance with the standards established by the Commission on Dental Accreditation of the American Dental Association.

The degree of Doctor of Dental Surgery is awarded to graduates of the school's professional program and the bachelor of science degree to graduates of the Division of Dental Hygiene.

Mission of the School of Dentistry

The primary mission of the School of Dentistry is to educate practitioners of dentistry capable of meeting the general oral health care needs of the communities they serve. Within this educational mission is the explicit responsibility to provide future practitioners with the analytical and technological skills which will allow them to be efficient providers of quality oral health care to the public, to be responsive to future changes in the profession, to be lifetime learners, and to advance dental knowledge.

Integral parts of the mission are the responsibility for the school to assume a prominent role in research and other scholarly activity, to provide service and patient care to the community, and to develop leaders in education and organized dentistry. Consistent with the primary mission, the School of Dentistry provides programs in advanced dental education, dental hygiene, and continuing education.

Admission Requirements

A minimum of 90 semester hours (or equivalent) in an accredited college or university is required and must be documented. Most acceptances have a bachelor's degree and/or four years of college. Required courses are general biology, general chemistry, organic chemistry, physics, and English. Laboratory experiences are required for those courses where applicable. Biology courses should emphasize zoology rather than botany. Courses in biochemistry, general microbiology or bacteriology, animal physiology, immunology, histology, genetics, embryology, the behavioral sciences, and courses involving psychomotor skills are strongly recommended. Academic credits presented by an applicant must be acceptable for credit toward a degree in the institution in which the courses are taken. Individuals interested in pursuing a career in dentistry should schedule an appointment in the Office of Admissions and Student Affairs for individual guidance.

In order to successfully complete the dental curriculum at Virginia Commonwealth University, students are

required to be able to communicate with faculty, students, staff, and patients. Accordingly, applicants may be required to prove their proficiency in American English via standardized tests and interviews. An applicant may consider the option of postponing matriculation until such time that he or she can meet these requirements.

Participation in the Dental Admission Test (DAT) of the American Dental Association is required. It is recommended that this test be taken the year before the intended matriculation year. Applicants are encouraged take the examination more than one time, and the best set of scores is used as the official set. Information about the Dental Aptitude Test can be obtained from: a) your pre-health advising office of your undergraduate school; b) Virginia Commonwealth University, School of Dentistry Office of Admissions and Student Affairs; or c) the American Dental Association, Department of Testing.

Selection Factors

The Medical College of Virginia of Virginia Commonwealth University is a state-supported, public university and gives admission preference to state residents. All applicants are evaluated by uniform criteria without regard to national origin, color, race, age, religion, or sex.

Students are accepted by the Admissions Committee on the basis of excellence of pre-dental education, DAT scores, recommendations, experiences in dentistry and results of personal interviews with members of the committee. The interview process is standardized and designed to determine motivation, knowledge of and interest in the dental profession, and to afford the applicant an opportunity to provide additional information pertaining to his/her application. Selection occurs on a rolling admissions basis, and once the class is complete, an alternate list is created. Members of minority groups under-represented in dentistry are especially encouraged to apply. Each year a certain number of students who are not accepted into the freshman class are invited to take selected courses with this class. Their performance in these courses plays a vital role in their being considered for the following year's admissions process.

Application Procedures

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applicants (and re-applicants) are required to submit credentials through this service. Re-applicants must also reapply through the application service. Application forms can be obtained from AADSAS, 1625 Massachusetts Avenue N.W., Suite 101, Washington, DC 20036, pre-dental advisers in colleges and universities, and the Office of Admissions and Student Affairs, School of Dentistry, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

Application to the School of Dentistry can be made through AADSAS on or after May 1 and must be received by AADSAS not later than January 1 of the year preceding intended matriculation.

AADSAS compiles academic records and other pertinent information and forwards these with the application to the School of Dentistry. Qualified applicants are then requested to submit supplemental information, such as letters of recommendation and official transcripts from all schools attended. The application fee is \$60.

Applicants will be notified of decisions according to guidelines established by the American Association of Dental Schools. The first acceptances are sent out on December 1, and a \$200 deposit (credited to tuition) is required by January 15. After February 1, the deposit must be received within two weeks following notification of acceptance. A second deposit of \$100 toward tuition is due on May 1. Both deposits are nonrefundable.

A letter of acceptance offers the candidate a position in the class entering for the session cited. Receipt by the Office of Admissions and Student Affairs of the initial \$200 nonrefundable tuition deposit within the prescribed period reserves the position in the class. Failure to reserve a position results in that position being offered to another candidate. The second \$100 nonrefundable tuition deposit initiates active administrative processing of matriculation into the first-year class. Failure to send this deposit results in loss of position, and the position is then offered to another candidate. The act of matriculation also implies a willingness on the part of the student to comply with University rules and regulations, to take an interest in maintaining the ideals of the institution, and to conduct himself/herself in a manner befitting a member of the dental profession.

Readmission Following a Health-Related Withdrawal¹

Health-related withdrawals will be granted, except in unusual circumstances, for the remaining portion of the academic year in which withdrawal is approved. In no event will withdrawal exceed one academic year.

A student in the School of Dentistry who is granted a health-related withdrawal and fails to notify the dean by the March 1 preceding the academic year in which studies are to be resumed (declaring his/her intent to return to school), ceases to be a student in the School of Dentistry, forfeits the right to return without reapplication, and must reapply through appropriate procedures if readmittance is desired.

First-year students who forfeit must reapply for a freshman class using the AADSAS system and, if admitted, will be considered first-year students with associated rights and responsibilities. Forfeiting students who withdraw from second-, third-, or fourth-year classes must apply in writing for admission with advanced standing according to established procedures.

Students who are readmitted will receive credit for only those courses which have been completed and a final grade rendered prior to withdrawal. Retention of credit for clinical requirements earned prior to withdrawal will be at the discretion of the appropriate department chair.

¹ This policy statement applies to the School of Dentistry and supplements the University Policy on Health-Related Withdrawals.

Students whose requests for withdrawal are approved by the dean for nonhealth-related reasons through the Academic Performance Committee must apply for readmission with advanced standing.

Admission with Advanced Standing

The School of Dentistry will consider applicants for admission with advanced standing on an individual basis depending upon positions available and qualifications of the applicant.

Financial Assistance

A brief description of financial aid based on demonstrated need is contained in Part III of this *Bulletin*. Financial need-based aid programs available to dentistry students include Health Professions Student Loan, State Dental Practice Scholarship, Virginia Dental Association Student Loan Program, and Federal institutional loans. Further information may be obtained from the Office of Admissions and Student Affairs of the School of Dentistry.

Honors and Awards

The School of Dentistry presents numerous awards, honors, and scholarships to students during the academic year. These awards are presented during special school events, including graduation, Student Clinic Day, and the Senior Gala. Students who excel in scholarship and leadership may also be eligible for membership in University or school honor societies. In addition, students who meet established criteria may be eligible for scholarships or election to membership in organizations related to dentistry.

Omicron Kappa Upsilon is the national honorary dental society. Each year the society selects those students who, in addition to scholarship, have demonstrated exemplary traits of character and potential qualities of future professional growth and attainments.

Phi Kappa Phi is a national honor society which recognizes and encourages superior scholarship. It accepts members from applied and professional fields of study, as well as from letters, arts, sciences, and humanities. The VCU chapter was installed in 1977.

Alpha Omega Scholarship Award is presented to the graduating student who has attained the highest scholastic rating for his/her four years of dental study.

Harry Lyons Merit Scholarship Award is awarded to the graduating senior dental student who has attained the highest grade-point average for his/her four years of dental school.

A. D. Williams Foundation Award is an annual stipend made to a student in each class who demonstrates, by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award, which is made at the end of the academic year.

O. M. Clough Award is awarded to a graduating senior dental student for outstanding achievement in restorative dentistry.

William B. Fitzhugh Scholarship Award is awarded to an incoming dental student who has demonstrated financial need, preference being given to students who have demonstrated athletic abilities at their undergraduate institution.

R. Ashton Gay and Henry F. Vaughan Scholarship is awarded to a student who was a Virginia resident at application to the Virginia Commonwealth University School of Dentistry, demonstrates academic excellence and leadership during the D-1 year, and has demonstrable need of financial assistance at the beginning of the D-2 year.

Edmond T. Glenn Award is awarded on the basis of financial need to a student ranked in the upper-half of the class at the end of the D-3 year and who has been involved in school/class activities.

International College of Dentists Award is presented to the graduating dental student who has shown the most professional growth and development during his/her years of dental study.

Pierre Fauchard Academy presents an award to the graduating dental student who has exhibited leadership qualities and through his/her accomplishments has demonstrated dedication to the advancement of dental literature.

The Richmond Dental Study Club Memorial Endowment Scholarship is awarded annually to a D-3 (junior) dental student based on his/her having a grade-point average in the top 25 percent of the class and demonstrating exceptional leadership and participation in school and/or community extra-curricular activities at the end of the D-2 (sophomore) year.

Alexander Kaufman Award is awarded to a junior dental student based on class leadership and financial need.

P. B. Miller Award awarded to the dental student judged by faculty as having demonstrated excellent understanding of the relationship between restorative dentistry and periodontics.

Robert M. Saunders Scholarship awarded to a junior or senior Virginia resident pre-doctoral dental student with excellent academic credentials.

Curriculum Leading to the DDS Degree²

The curriculum in the dental school is organized into a four-year program leading to the Doctor of Dental Surgery (DDS) degree. The academic year begins in July and extends through May. The program emphasizes study in three broad areas: basic human sciences, clinical sciences, and social sciences.

The basic human sciences include the in-depth study of human anatomy, biochemistry, genetics, microbiology, pathology, pharmacology, and physiology.

² In general, courses offered as part of the curriculum in dentistry are not available to other students in the University. Exceptions may be granted by the Dean, School of Dentistry, to students enrolled in graduate degree programs upon written request of the chair of the department in which the student is seeking a degree.

The clinical sciences prepare the student for the actual practice of dentistry and provide exposure to the various specialties in dentistry.

The behavioral sciences cover such topics as dental health needs, the system of health care delivery, practice management, professional ethics, and behavioral factors.

Laboratory and clinical experiences are offered throughout the four years to develop the skills and judgment vital to the practice of general dentistry.

Freshman, First Semester

	<i>Credits</i>
ANA 501 Gross Anatomy	9.5
ANA 503 Neuroanatomy	1.5
BIC 501 Biochemistry	5.0
DEN 510 Scientific Inquiry	1.0
DEN 511 Dentistry and Education	0.5
GEN 531 Dental Genetics	2.0
GEP 501 Introduction to Preventive Dentistry	0.5
GEP 510 Dental Materials	2.5
GEP 511 Dental Anatomy	2.5
GEP 514 Fundamentals of Occlusion	3.0

Freshman, Second Semester

ANA 502 Microscopic Anatomy	6.0
GEP 512 Operative Dentistry	6.5
MIC 513 Infection and Immunity in Dentistry	5.5
PIO 502 Mammalian Physiology	5.0

Sophomore, First Semester

DEN 601 Patient Management	0.5
DEN 621 Occlusion	2.0
DEN 625 Clinical Skills	1.0
GEP 620 Cariology	3.0
GEP 621 Operative Dentistry	3.0
ORP 621 Dental Radiology	0.5
ORT 623 Orthodontics	*
PAT 601 General Pathology	6.0
PED 622 Introduction to Pediatric Dentistry	*
PER 626 Periodontics I	2.0
PMC 609 Dental Pharmacology and Pain Control	*
PRS 622 Preclinical Fixed Prosthodontics	*
PRS 623 Preclinical Complete Denture Prosthodontics	*

Sophomore, Second Semester

DEN 625 Clinical Skills	2.0
END 622 Principles of Endodontics	2.5
ORP 622 Oral Pathology	2.5
ORS 622 Introduction to Oral Surgery	1.0
ORT 623 Orthodontics	2.0
PED 622 Introduction to Pediatric Dentistry	2.5
PER 629 Periodontics II	4.0
PMC 609 Dental Pharmacology and Pain Control	4.0
PRS 622 Preclinical Fixed Prosthodontics	7.0
PRS 623 Preclinical Complete Denture Prosthodontics	6.0
PRS 624 Preclinical Removable Prosthodontics	4.0
PRS 627 Diagnostic Impression Lab	1.0

Junior, First Semester

END 731 Endodontic Therapy	1.0
END 739 Clinical Endodontics 3	**
GEP 739 Clinical Operative 3	*
GEP 745 Clinical Principles of Restorative Dentistry	1.0
ORP 737 Radiology Rotation	*
ORS 731 Physical Evaluation and Principles of Medicine	2.0
ORS 733 Principles of Oral and Maxillofacial Surgery	*
ORS 739 Clinical Oral Surgery 3	*
ORT 739 Clinical Orthodontics 3	**
PED 733 Advanced Pediatric Dentistry	*
PED 739 Clinical Pediatric Dentistry 3	*
PER 733 Periodontics III	1.0
PER 739 Clinical Periodontics 3	*
PMC 611 Dental Pharmacology and Pain Control	2.0
PRS 737 Prosthodontics Diagnosis and Treatment Planning	1.0

PRS 739 Clinical Removable Prosthodontics 3	*
PRS 739 Clinical Fixed Prosthodontics 3	*

Junior, Second Semester

DEN 733 Geriatric Dentistry	1.0
DEN 735 Records Management	0.5
END 739 Clinical Endodontics 3	1.5
GEP 739 Clinical Operative 3	5.0
GEP 747 Dental Assistant Utilization	1.0
ORP 732 Clinical Oral Pathology and Oral Medicine	1.0
ORP 737 Radiology Rotation	**
ORS 733 Principles of Oral and Maxillofacial Surgery	2.0
ORS 735 Medical Emergencies	1.0
ORS 739 Clinical Oral Surgery 3	1.5
ORT 733 Orthodontic Therapy	1.0
ORT 739 Clinical Orthodontics 3	**
PED 733 Advanced Pediatric Dentistry	2.0
PED 739 Clinical Pediatric Dentistry 3	1.5
PER 739 Clinical Periodontics 3	5.0
PRS 731 Complete Denture Prosthodontics	1.0
PRS 735 Removable Partial Denture Lecture	2.0
PRS 739 Clinical Removable Prosthodontics 3	1.5
PRS 739 Clinical Fixed Prosthodontics 3	2.0
PRS 745 Clinical Principles of Fixed Prosthodontics	1.0

Senior, First Semester

END 749 Clinical Endodontics 4	*
GEP 743 Clinical Module	*
GEP 747 Dental Assistant Utilization	1.0
GEP 749 Clinical Operative 4	*
ORP 747 Radiology Rotation	1.5
ORP 749 Emergency Service	*
ORS 741 Special Patient Care	*
ORS 749 Clinical Oral Surgery 4	*
ORT 749 Clinical Orthodontics 4	1.5
PED 749 Clinical Pediatric Dentistry 4	*
PER 749 Clinical Periodontics 4	*
PRS 749 Clinical Removable Prosthodontics 4	*
PRS 749 Clinical Fixed Prosthodontics 4	*

Senior, Second Semester

DEN 741 Head and Neck Pain	1.0
DEN 745 Records Management	0.5
END 749 Clinical Endodontics 4	1.5
GEP 741 Practice Administration	3.0
GEP 743 Clinical Module	6.0
GEP 749 Clinical Operative 4	4.0
ORP 749 Emergency Service	1.5
ORS 741 Special Patient Care	1.0
ORS 749 Clinical Oral Surgery 4	2.0
PED 749 Clinical Pediatric Dentistry 4	2.0
PER 749 Clinical Periodontics 4	4.0
PRS 749 Clinical Removable Prosthodontics 4	6.0
PRS 749 Clinical Fixed Prosthodontics 4	6.0

* Continues into second semester.

** Completed first semester senior year.

Academic Performance Committee Guidelines

The faculty of the Virginia Commonwealth University School of Dentistry has the responsibility for evaluating the student's academic performance. It is incumbent on the course directors or their designees to specify, at the time that courses first convene, the criteria to be used in student assessment and the standards by which they will be judged.

The guidelines which govern the actions of the Academic Performance Committee and which guide the academic activities of the students are distributed to all students at the beginning of their studies. They are

available upon request from the Office of Academic Affairs, School of Dentistry.

Office of Continuing Education

Thomas C. Burke

Assistant Dean for Development and Continuing Education (1986)
BS 1978 and MS 1995 Virginia Commonwealth University

For every professional person who serves the health sciences, education must be a lifetime commitment.

Graduation from dental school is the beginning of a life-long educational experience for the serious, conscientious student of dentistry. Regardless of how well prepared a health professional may be at the time of graduation, the adequate knowledge of yesterday is often insufficient information for today and tomorrow. With the rapid advancements made in dental technology and techniques, the professional must constantly seek new knowledge if the health care provider is to improve the health care given to patients.

Although the majority of continuing education courses are presented at the School of Dentistry, some offerings are given in other locations. The courses, which vary in length from one day to four days, are scheduled throughout the year and consist of a variety of instructional methods from didactic to hands-on participation in clinical programs.

The instructional staff is comprised of faculty from the Virginia Commonwealth University School of Dentistry, guest lecturers from other dental schools, and members of the dental profession and related professions from the United States and other countries.

Advanced Dental Education Programs

The School of Dentistry provides advanced dental education programs in the areas of endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics, general practice residency (GPR) and advanced education in general dentistry (AEGD). Satisfactory completion of the program leads to the award of a certificate of training and certifies eligibility for examination by the appropriate specialty board. All programs are accredited by the Commission on Dental Accreditation of the American Dental Association. A program is also offered for advanced education in anesthesiology for dentistry. Those enrolled in the advanced education programs are full-time resident trainees, considered to be the equivalent of full-time students. Under special circumstances, trainees may be accepted into some programs on a part-time basis.

Applications for admission should be directed to the director of the appropriate program, School of Dentistry, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

Advanced Education in General Dentistry

Carol N. Brooks

Assistant Professor of General Practice and Program Director
(1995) BS 1975 and DDS 1994 Medical College of Virginia of Virginia Commonwealth University

The purpose of this 12-month advanced education residency program is to provide advanced education and clinical experience to prepare dental school graduates for a career in the practice of comprehensive, general dentistry. Graduates of this program will have attained added competency and confidence in all areas of dental care, practice management, and professional responsibility. Further, this program provides residents with meaningful experiences in the delivery of dental care to underserved populations and people at high risk for dental disease. A strong affiliation exists between the School of Dentistry and the statewide Virginia Area Health Education Center (AHEC), whose mission is to increase primary health care in underserved areas. The AEGD program works in concert with AHEC to deliver dental care and recruit/train minority health care providers from health professional shortage areas. Further, the dental school operates and the AEGD residents assist with staffing of a mobile dental van, which adds a unique aspect to the training provided in this program.

The School of Dentistry is committed to advanced dental education. The residents will receive hands-on experience with diagnostic and therapeutic care of special patient populations in addition to extensive training in the art and science of general dentistry. AEGD residents may be required to participate in off-site clinical experiences outside the city of Richmond, Virginia. Funds will be provided for travel and lodging when required.

Eligibility and Selection: Dentists with the following qualifications are eligible to apply for the AEGD program.

1. Dental graduates from institutions in the U.S. accredited by the Commission on Dental Accreditation of the American Dental Association.
2. Graduates of foreign dental schools who possess equivalent educational background and standings and have passed Parts I and II of the National Board Examination.

Selection criteria include: didactic and clinical achievements, extramural experience, interpersonal skills, and a demonstrated commitment to pursue a career in general dentistry. Every effort is made to recruit qualified applications from minority dentists and dentists from health professional shortage areas or dentists who profess a desire to serve in these areas. A selection committee consisting of the program director, the Assistant Dean for Admissions, members from specialty areas, former residents and current residents will screen all applications. Using the above-mentioned selection criteria, the most promising applicants will be invited for personal interviews. Trainees and alternates will be selected. This program participates in the Postdoctoral Application Support Service Program and the Postdoctoral Dental Matching Program.

Endodontics

Gary R. Hartwell

Associate Professor and Program Director and Department Chair
(1987) DDS 1966 West Virginia University; MS 1974 George Washington University

The advanced education program in endodontics is designed to educate qualified individuals to pursue

careers as teachers, researchers and practicing clinical specialists of endodontics.

The basic 24-month certificate program is composed of two interrelated phases. The first consists of lecture courses which provide the student with a firm biological basis for patient care. The second phase consists of lectures, seminars, and clinical training which is designed to produce clinical proficiency. Research experience is gained through the completion of an individual research project. The entire program conforms to guidelines established by the American Board of Endodontics, the American Association of Endodontics, and the Commission on Dental Accreditation of the American Dental Association.

Oral and Maxillofacial Surgery

Robert A. Strauss

Associate Professor and Program Chair (1987) BS 1975 and DDS 1979 State University of New York, Buffalo

The oral and maxillofacial surgery program is designed to provide extensive didactic and clinical experience in all aspects of the specialty. Those who complete the four years of training satisfactorily fulfill the prerequisites for examination and certification by the American Board of Oral and Maxillofacial Surgery.

The didactic portion of the program includes formal courses in oral pathology, anatomy, and physical diagnosis, as well as numerous weekly conferences and seminars. Clinical rotations on oral pathology, anesthesia, medicine, surgical oncology, neurosurgery, cardiology, plastic surgery, emergency room, and the trauma services are used to supplement the trainee's surgical experience. Throughout the program there is a constant correlation of the clinical experience with the biomedical sciences.

Through the multiple clinical and didactic facilities of the Virginia Commonwealth University medical center complex, the McGuire Veterans Affairs Medical Center, and St. Mary's and the Richmond Eye and Ear Hospitals, there is ample material for education in the latest oral and maxillofacial surgical techniques. The oral and maxillofacial surgery service is responsible for diagnosis and management of diseases and injuries related to the oral and facial region. Trainees are involved in all aspects of treatment including simple and complicated oral surgery, anesthesia and pain control, oral and maxillofacial trauma, preprosthetic surgery, orthognathic surgery, head and neck pathology, oral and maxillofacial reconstruction, temporomandibular joint surgery, and microneural and microvascular surgery. During the four years, the trainee assumes ever-increasing responsibilities as time and abilities dictate.

Upon satisfactory completion of the four-year residency, the trainee may earn the Doctor of Medicine degree from the School of Medicine by enrolling in the second and third years of that curriculum. This is followed by a one-year residency in general surgery at MCV Hospitals of Virginia Commonwealth University to complete the combined program.

Orthodontics

Steven J. Lindauer

Associate Professor and Program Director (1989) BA 1982 University of Pennsylvania; DMD 1986 and MDS 1989 University of Connecticut

Medical College of Virginia of Virginia Commonwealth University's School of Dentistry offers this 24-month advanced education program in orthodontics through the Department of Orthodontics. The program incorporates state-of-the-art clinical care in orthodontics in an environment modeled after private orthodontic practice. The curriculum is composed of seminars and small group instruction with emphasis on critical thinking and problem solving. Contemporary orthodontic treatment is reviewed for substantive and scientific content. Also included are regular orthognathic surgery conferences and interactions with other dental and medical specialties. The successful completion of a research project is a requirement of the program.

Completion of the program and eligibility for the limited practice of orthodontics is certified by the faculty in orthodontics. The program makes the student educationally qualified to take the written portion of the American Board of Orthodontics, which is required for completion of the program.

Students do qualify for loans and can defer present student loans. One thousand dollars per year is currently available for each of the two years of the program (to be used toward travel to the American and Virginia Associations of Orthodontists' annual meetings).

A graduate program, requiring additional time to complete, is also available for students that have been accepted into the two-year program. This program leads to a certificate in orthodontics and a Master of Science degree in a basic health science. The curriculum is designed for each individual by the Department of Orthodontics and the School of Medicine department concerned.

Pediatric Dentistry

Arthur P. Mourino

Associate Professor and Program Director (1974) BS 1965 Georgetown University; MS 1967 Hofstra University; DDS 1972 Georgetown University; MSD 1974 Indiana University

The advanced dental education program in pediatric dentistry is a 24-month program designed to meet the guidelines of the American Academy of Pediatric Dentistry and the requirements of the Commission on Accreditation of the American Dental Association. It is a combined University and hospital-based program leading to a certificate of advanced training in pediatric dentistry. In addition, a combined program leading to an MS or PhD degree with a clinical specialty in pediatric dentistry is available for interested and qualified individuals.

Emphasis is placed on a diversified educational experience. Teaching and research opportunities supplement the clinical, hospital, and didactic components of the program. The course of study includes clinical experience in the treatment of children, including those with medical, physical, and emotional disabilities

handicapped, as well as normal children, pediatric and hospital rotations, and comprehensive dental care with the aid of sedation and general anesthesia. Seminars are held in pediatric dentistry, orthodontic diagnosis, treatment planning, growth and development, cephalometric analysis, pediatric dentistry literature review and behavioral guidance. Formal courses in biostatistics, principles of pediatrics, pediatric advanced life support, head and neck anatomy, basic sciences and clinical core courses are required. Elective courses are available within the University and the School of Dentistry.

Periodontics

Thomas C. Waldrop

Associate Professor and Program Director (1994) DDS 1973 Medical College of Virginia of Virginia Commonwealth University; MS 1978 University of Texas; Certificate 1978 Wilford Hall Medical Center

The advanced education program in periodontics consists of a 36-month curriculum leading to a certificate of training in periodontics. Courses in the basic and clinical sciences, medicine, head and neck anatomy, statistics and advanced cardiac life support are required. Periodontal courses include lectures, current and periodontal literature, medical-oral medicine, treatment planning, case presentation, and surgical seminars. All provide opportunities for concentrated learning and experience in the clinical specialty of periodontics, as well as interaction with other clinical specialties. The program includes a diverse program in clinical instruction. The program affords the student the opportunity to develop the capacity for judgment and adaptability from knowledge of basic and clinical science and from evaluation of the literature. The program prepares the student for board certification in the specialty of periodontics.

Emphasis is also placed on the most current clinical advances in implantology, laser techniques and regenerative procedures. A comprehensive conscious sedation program is offered. Rotations include oral medicine, anesthesiology and oral pathology. The program involves clinical and classroom teaching to undergraduate students. Research activities which lead to publication and presentation are required. Specialty faculty attend the program, including affiliate faculty in the basic sciences. The program starts the first week in July.

For students interested in pursuing an advanced degree, MS and PhD, basic health science programs are offered through the School of Medicine. Combined programs require a minimum of 48 months for completion of requirements for the MS and a minimum of 60 months for the PhD degree. Application is independent from the certificate program.

Prosthodontics

David R. Burns

Associate Professor and Program Director (1985) BS 1976 Lewis and Clark College; DMD 1980 University of Oregon; Certificate 1985 Emory University

The School of Dentistry offers a 33-month program in prosthodontics. Prosthodontics is that specialty of dentistry which endeavors to repair and/or replace the function of the lost or damaged natural dentition. The curriculum combines didactic and clinical instruction in the biology, biomaterials, and clinical application of prosthodontic principles. Teaching is by formal classroom instruction, seminar, and clinical practice. A basic science core curriculum provides instruction in basic human sciences. Prosthodontic instruction is accomplished by seminars and one-on-one clinical instruction. The student is expected to be able to utilize the resources of the medical library in development of seminars and to lead topic-based reviews of the literature. Classes, seminars, and literature review sessions are held weekly during the fall and spring semesters. Clinical instruction is provided year-round. The program follows the School of Dentistry calendar, except for the starting date, which is the first weekday in July.

The program is not entirely based upon specific requirements, though certain levels of accomplishment are expected. Didactic requirements are based on performance, attendance, and examination. No grade lower than "C" is acceptable from any basic science course. Prosthodontic instruction includes: fixed prosthodontics, removable, complete, and partial dentures; maxillofacial prosthodontics and prosthodontic laboratory procedures; the utilization of implants to support prostheses; and fully adjustable instrumentation, generated path, masticatory dysfunction, and occlusion.

Each student is required to propose, perform, and report on a research topic of choice. Research topics will be submitted, reviewed, and approved by a committee of faculty. Funding is generally available for the project demands.

The program also requires that students engage in teaching undergraduate dental students.

General Practice Residency

C. Daniel Dent

Clinical Professor, Program Director and Chair, Division of Dental Medicine BA 1970 University of Virginia; DDS 1974 Virginia Commonwealth University

The School of Dentistry, the Medical College of Virginia Hospitals of Virginia Commonwealth University, and the Veterans Affairs Medical Center offer a two-year residency in the general practice of dentistry. The program is designed to provide the new dentist with the experience and skills needed for the total care of the dental patient. Such patients include those requiring adjunct medical support services, those suffering from a variety of medical conditions, and those who are at particularly high risk for infection.

Primary dental care is provided in a number of clinical settings, including the clinics on the MCV Campus and the dental service in the Hunter Holmes McGuire Veterans Affairs Medical Center. Dental care for the hospitalized patient is provided in both ambulatory and nonambulatory settings.

Rotations in the general practice residency program include anesthesia, internal medicine, oral pathology,

oral and maxillofacial surgery, radiation oncology, cardiology, endoscopy, speech pathology, and emergency medicine. Supplementing these rotations is core course work in physical diagnosis as well as lectures, rounds, and seminar series. Dental residents have the opportunity to participate in conferences and rounds presented by other clinical departments. Dental conferences include treatment planning, literature review, oral pathology slide seminar, oral and maxillofacial surgery treatment conference, departmental rounds, and lectures in all of the dental specialties.

Didactic courses and clinical experience are provided in placement and restoration of dental implants. Residents are also provided training to enable them to administer conscious sedation under the dental regulations in the State of Virginia.

The faculty include general practitioners, consulting physicians, and attendings from each of the dental specialties. Dental residents are supervised during all phases of treatment in all settings. Competence in the evaluation and management of patients with medical disorders is a major objective of the training program.

Postgraduate Training in Anesthesiology for Dentistry

Robert L. Campbell

Professor of Oral and Maxillofacial Surgery and Anesthesiology and Program Director (1977) BS 1964 John Carroll University; DDS 1968 Case Western Reserve University

A two-year program in anesthesiology and related sciences prepares the graduate dentist with the necessary didactic and clinical skills for a career in teaching or private practice.

The didactic component combines coursework from two academic areas: physical diagnosis directed by the Department of Internal Medicine, School of Medicine, and didactic courses, and educational seminars in the Department of Anesthesiology, School of Medicine.

One-month clinical rotations in medicine and cardiology and an eight-month rotation in anesthesiology are supplemented with weekly assignments in the outpatient anesthesia clinic in the dental school, the temporomandibular joint and chronic facial pain clinic, pediatric dentistry sedation clinic, and the ambulatory anesthesia clinics in the oral surgery department at the A.D. Williams Clinic and in the Nelson Clinic.

For information contact the Program Director, Department of Oral and Maxillofacial Surgery.

Combined DDS and MS or PhD Programs

The dental curriculum provides an opportunity for interested dental students to enter a combined DDS/MS or PhD program.

Individualized curricula are developed for such students with the approval of the students' advisers in the graduate department of study and the assistant dean for research of the School of Dentistry. Ordinarily, the combined program requires more than four years to complete requirements for both degrees. For further

details, contact the Assistant Dean for Research at the School of Dentistry.

Division of Dental Hygiene

Janet L. Scharer

Assistant Professor and Program Director (1990) AS 1968 Cuyahoga Community College (1990) BS 1971 and MA 1974 Ohio State University

Neel, Nancy L. (1982) Assistant Professor AT 1964, BS 1978 and MS 1982 Southern Illinois University

Pellegrini, Joan M. (1989) Assistant Professor AA 1968 and BS 1970 Fairleigh Dickinson University; MS 1972 Columbia University

The Division of Dental Hygiene, which began in 1969, offers courses leading to a Bachelor of Science in Dental Hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene theory, community health and preclinical and clinical experiences. The Dental Hygiene Program is accredited by the Commission on Dental Accreditation of the American Dental Association. Upon successful completion of the program, graduates are eligible for national, regional, and state board licensing examinations.

Philosophy and General Educational Goals

The Division of Dental Hygiene believes the modern practicing dental hygienist requires a broad range of skills to function effectively. Competency in specific clinical-technical skills, while essential, will not be sufficient to meet increasing social needs and demands for comprehensive oral health care at all societal levels. The Division views the baccalaureate degree dental hygienist as a leader, not only in helping the dental profession respond to a changing environment, but also in developing and initiating interventions which prevent and control oral disease and promote oral wellness, and in facilitating that change itself.

The Division, in conjunction with the School of Dentistry, also assumes a responsibility to provide current and future practitioners with skills which allow them to provide efficient, quality oral health care to the public, to be responsive to a changing profession, to be lifelong learners, and to assume leadership roles within the profession and community.

Within the Division of Dental Hygiene the clinical component is designed to provide the student with the opportunity to develop, utilize and enhance the knowledge and skills of dental hygiene practice. Dental hygiene services are provided in a clinical model which emphasizes comprehensive patient care and provides a foundation for transference of skills to the work environment. Therefore, the baccalaureate degree program in dental hygiene has the following overall goals:

- Performs traditional dental hygiene functions.
- Employs decision-making skills in providing clinical service in health care and educational programs.
- Functions with supervision in an extended role in the provision of independent units of service.

- Assumes a leadership role within political, social, educational, and professional settings to improve the health of all members of society.
- Designs and implements health programs utilizing principles and theories of learning, health care organizations, behavioral science, and communication skills.
- Applies research methodology to design and to evaluate the effectiveness of health care and educational programs.
- Administers dental service programs in comprehensive health care units and community settings.
- Functions as a dental health consultant.
- Prepares for graduate and advanced professional programs.

Honors and Awards

Sigma Phi Alpha is the National Dental Hygiene Honor Society. Elected to membership are senior dental hygiene students who rank highest in scholarship and character and exhibit potential qualities for future growth and attainment as recommended by faculty members. Membership is limited to 10 percent of the graduating class and is selected from the upper 20 percent of the class.

Community Dental Hygiene Award. This award, presented annually to a graduating senior dental hygiene student, is based on the student's ability to recognize and understand the oral health needs of a community, as well as on the demonstrated ability to develop and implement a program to meet those needs.

Virginia Dental Hygienists' Association Award. An annual award is made to one graduating senior and is based on the student's scholastic ability, clinical proficiency, and professional contributions. A one-year membership in the American Dental Hygienists' Association and a certificate are presented to the selected student.

A. D. Williams Award. An annual stipend may be made to a student in each class who demonstrates unusual promise and ability by virtue of high scholastic attainment and professional performance. Character, motivation, intellectual curiosity, and realization of the opportunities for intellectual development will be considered in the award.

Financial Aid

Scholarships and loans are available through various sources. Full information on financial aid is available upon request from the Financial Aid Office, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

Admission Requirements

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic courses are required.

	<i>Credits</i>
English	6
General Biology and Laboratory	3-5
College Chemistry and Laboratory	3-5
Anatomy and Physiology and Lab	5-8

Microbiology and Laboratory	3-5
Humanities	3
Introductory Sociology	3
Introductory Psychology	3
Speech	3
Statistics	3
Visual/Performing Arts	2-3

- Approved electives fulfilling the distribution requirements of the liberal arts college or university currently attending.
- At least a "C" average must be earned for all work undertaken.
- A personal interview by a previously arranged appointment may be requested during the admissions process.
- All non-native English speaking applicants must present a TOEFL score of 580 or better and a TWE score of 4.5 or better.
- A personal interview by a previously arranged appointment may be requested during the admissions process.

For pre-admission academic counseling contact Admissions, Division of Dental Hygiene, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566, (804) 828-9096.

An application packet may be obtained by contacting Virginia Commonwealth University, MCV Office of Undergraduate Admissions, P.O. Box 980632, Richmond, VA 23298-0632.

Curriculum

The curriculum includes study of the basic, dental, and clinical sciences through lecture, laboratory, clinical, and community experiences.

Junior Year, First Semester	<i>Credits</i>
ANA 301 Head and Neck Anatomy	5.0
ANA 302 Microscopic Anatomy	3.0
DEH 301 Dental Hygiene Theory I	5.0
GEP 302 Dental Materials	2.0
GEP 311 Dental Anatomy and Occlusion	2.0
MIC 365 Infection and Immunity	3.0
ORP 301 Dental Radiology	0.5
PER 326 Periodontics	1.5
	<hr/>
	22.0
Junior Year, Second Semester	
DEH 302 Dental Hygiene Theory II	2.0
DEH 312 Preventive Oral Health Education	3.0
DEH 342 Nutrition	3.0
DEH 322 Radiology Seminar and Rotation	1.5
DEH 327 Clinical Dental Hygiene I/Seminar	4.0
ORP 324 Oral Pathology	3.0
PER 329 Periodontics II	4.0
	<hr/>
	20.0
Senior Year, First Semester	
DEH 401 Dental Hygiene Theory III	2.0
DEH 411 Community Dental Health	2.0
DEH 413 Special Patient Care	3.0
DEH 437 Clinical Dental Hygiene II/Seminar	5.0
PMC 441 Pharmacology and Pain Control	5.0
	<hr/>
	17.0
Senior Year, Second Semester	
DEH 402 Dental Hygiene Theory IV	2.0
DEH 412 Community Dental Health Practicum*	3.0
DEH 422 Current Issues, the Law and Ethics	2.0
DEH 432 Special Patient Clinical Practicum*	3.0
DEH 442 Introduction to Dental Hygiene Education*	3.0
DEH 447 Clinical Dental Hygiene III/Seminar	6.0
BIS 430 Elements of Biometry	2.0
DEN 733 Geriatric Dentistry**	1.0
	<hr/>
	15.0 - 19.0

* Students must take one of these courses; they may enroll in more than one.

** Students may take this course as an elective.

Departments and Programs of Instruction

Detailed information pertaining to course descriptions and degree requirements is available from the School of Dentistry.

Program in Dental Hygiene (DEH)

Janet L. Scharer

Assistant Professor and Program Director (1990) AS 1968 Cuyahoga Community College (1990) BS 1971 and MA 1974 Ohio State University

Courses in Dental Hygiene (DEH)

DEH 301	Dental Hygiene Theory I
DEH 302	Dental Hygiene Theory II
DEH 312	Preventive Oral Health Education
DEH 322	Radiology Seminar and Rotation
DEH 327	Clinical Dental Hygiene I/Seminar
DEH 342	Nutrition
DEH 401	Dental Hygiene Theory III
DEH 402	Dental Hygiene Theory IV
DEH 411	Community Dental Health
DEH 412	Community Dental Health Practicum
DEH 413	Special Patient Care
DEH 422	Current Issues, the Law and Ethics
DEH 432	Special Patient Clinical Practicum
DEH 437	Clinical Dental Hygiene II/Seminar
DEH 442	Introduction to Dental Hygiene Education
DEH 447	Clinical Dental Hygiene III/Seminar
DEH 449	Clinics in Dental Hygiene
DEH 450	Independent Study

Department of General Practice

David C. Sarrett

Associate Professor and Department Chair (1992) DMD 1977 and MS 1988 University of Florida

- Barnes, Robert F., Jr. (1977) *Associate Professor* BA 1967 University of Virginia; DDS 1973 Medical College of Virginia of Virginia Commonwealth University
- Baughan, Linda W. (1987) *Associate Professor* BS 1973 Christopher Newport College; MEd 1978 Virginia Commonwealth University; DDS 1983 Medical College of Virginia of Virginia Commonwealth University
- Betzhold, William C. (1993) *Assistant Professor* BS 1967 Ohio State University; DDS 1971 Ohio State University; Certificate in Prosthodontics 1995 Medical College of Virginia of Virginia Commonwealth University
- Brooks, Carol Nibley (1982) *Assistant Professor* BS 1975 Medical College of Virginia of Virginia Commonwealth University; DDS 1994 Medical College of Virginia of Virginia Commonwealth University; Certificate AEGD 1995 Medical College of Virginia of Virginia Commonwealth University
- Bush, Francis M. (1964) *Professor* BS 1955 University of Kentucky; MS 1957 University of Kentucky; PhD 1962 University of Georgia; DMD 1975 University of Kentucky
- Button, Gilbert L. (1976) *Associate Professor* BS 1969 Virginia Polytechnic Institute and State University; DDS 1973 and Certificate 1986 Medical College of Virginia of Virginia Commonwealth University
- Dishman, Michael V. (1988) *Assistant Professor* BS 1970 Randolph-Macon College; DDS 1974 Medical College of Virginia of Virginia Commonwealth University
- Foster, Francis M. (1991) *Assistant Professor* BS 1942 Virginia Union University; DDS 1946 Howard University
- Hagan, Betsy A. (1980) *Associate Professor and Assistant Dean for Clinical Affairs* (1980) BS 1974 Virginia Polytechnic Institute and State University; DDS 1978 Medical College of Virginia of Virginia Commonwealth University; MBA 1984 Virginia Commonwealth University
- Harrington, Walter G. (1975) *Associate Professor* AB 1965 Case Western Reserve University; DDS 1969 Case Western Reserve University

- Hellman, Larry Frank (1994) *Assistant Professor* BS 1963 Midwestern University; DDS 1967 University of Texas; MEd 1994 George Washington University
- Hunt, Jr., Lindsay M. (1985) *Professor and Dean* BA 1961 University of Oklahoma; DDS 1965 and PhD 1971 Baylor University
- Moon, Peter C. (1971) *Associate Professor* BS 1965 University of Toledo; MS 1968 and PhD 1971 University of Virginia
- Robertello, Francis J. (1993) *Assistant Professor* BA 1964 Syracuse University; DMD 1968 University of Pennsylvania; MS 1978 University of Michigan; MEd 1984 George Washington University
- Whitehill, James Michael (1992) *Assistant Professor* BS 1970 Buena Vista College; DDS 1974 University of Iowa; MS 1985 University of Iowa
- Wiley, Paul M. (1996) *Assistant Professor* BA 1972 University of Virginia; DDS 1976 Medical College of Virginia of Virginia Commonwealth University; MS 1989 University of Michigan; Med 1994 George Washington University

Clinical Faculty

Adams	Bogacki
Browder	Certosimo
Covington	Cranham
Duff	Elstner
Eshleman	Finley-Parker
Forgeng	Griggs
Hegarty	Helvey
Hoffman	Hooper
Huband, A.	Hubbard
Johnson	Johnston
Kennett	Kessler
Killar	Kittrell
Kontopanos	Korpics
Lee	Levin
Levitin	McAndrew
McCormick	Morgan
Muncy	Overstreet
Perkinson	Pfab
Renkenberger	Robinson
Rogers	Root
Russell	Schroeder
Shepard	Selander
Sharp	Sohanian
Smith	States
Stenger	Sterne
Stoner	Taylor
Turnage	Vijay
Wade	Weaver
Wiley	Williams
Wolf	

Courses in General Practice (GEP)

GEP 311	Dental Anatomy and Occlusion (Dental Hygiene)
GEP 501	Introduction to Preventive Dentistry
GEP 510-(302)	Dental Materials (Dental Hygiene)
GEP 511	Dental Anatomy
GEP 512	Operative Dentistry
GEP 514	Fundamentals of Occlusion
GEP 620	Cariology
GEP 621	Operative Dentistry
GEP 739-749	Clinical Operative
GEP 741	Practice Administration
GEP 743	Clinical Module
GEP 745	Clinical Principles of Restorative Dentistry
GEP 747	Dental Assistant Utilization

Department of Endodontics

Gary R. Hartwell

Associate Professor and Department Chair (1987) DDS 1966 West Virginia University; MS 1974 George Washington University

- Hahn, Chin-Lo (1991) *Assistant Professor* BDS 1982 Taipei Medical College, Taiwan; MS 1985 and PhD 1989 University of Maryland, Baltimore; DDS 1991 University of Missouri, Kansas City

Emeriti Faculty

Dodds, R. Neil *Associate Professor Emeritus* BA 1953 Carroll College; DDS 1957 Creighton University
 England, Marshall C., Jr., *Professor Emeritus* BS 1954 Maryville College; DDS 1958 and MS 1967 Medical College of Virginia

Clinical Faculty

Achleithner	Archer
Blundell	Byrne
Forté	Garrett
Kelly	Lance
Lieb	Monfared
O'Sullivan	Sempira
Thornton	Walker
Wood	

Courses in Endodontics (END)

END 622	Principles of Endodontics
END 731	Endodontic Therapy
END 739-749	Clinical Endodontics

Department of Oral Pathology**James C. Burns**

Professor and Department Chair (1978) BS 1968 Virginia Military Institute; DDS 1972 Medical College of Virginia of Virginia Commonwealth University; MEd 1975 University of Southern California; PhD 1979 Medical College of Virginia of Virginia Commonwealth University

Abbey, Louis M. (1971) *Professor* AB 1963 Earlham College; DMD 1967 and MS 1971 Tufts University
 Kaugars, George E. (1980) *Professor* BS 1971 Florida State University; DDS 1975 Medical College of Virginia of Virginia Commonwealth University
 Page, Dennis G. (1973) *Associate Professor* AB 1963 Westminster College; DDS 1967 University of Illinois; MS 1973 Loyola University
 Svirsky, John A. (1976) *Professor* BA 1969 University of Richmond; DDS 1973 Medical College of Virginia of Virginia Commonwealth University; MEd 1979 Virginia Commonwealth University

Emeriti Faculty

Salley, John J. *Professor Emeritus* DDS 1951 Medical College of Virginia; PhD 1954 University of Rochester; DSc 1975 Boston University

Clinical Faculty

Beam	Barban
Boyd	Cleveland
Durr	Evens
Kotler	Mera
Mitman	Powers
Sawicki	Saxon

Courses in Oral Pathology (ORP)

ORP 301	Dental Radiology (Dental Hygiene)
ORP 324	Oral Pathology (Dental Hygiene)
ORP 621	Dental Radiology
ORP 622	Oral Pathology
ORP 732	Clinical Oral Pathology and Oral Medicine
ORP 737-747	Radiology Rotation
ORP 749	Emergency Service

Department of Oral and Maxillofacial Surgery**Daniel M. Laskin**

Professor and Department Chair (1983) BS 1947 and DDS 1947 Indiana University; MS 1951 University of Illinois

Abubaker, A. Omar (1991) *Assistant Professor* BDS 1975 University of Alexandria, Egypt; PhD 1984 University of Pittsburgh; DMD 1990 University of Pittsburgh

Campbell, Robert L. (1977) *Professor of Oral and Maxillofacial Surgery and Anesthesiology* BS 1964 John Carroll University; DDS 1968 Case Western Reserve University

Giglio, James A. (1981) *Associate Professor* BA 1964 La Salle College; DDS 1968 University of Maryland; MEd 1989 Virginia Commonwealth University

Hardigan, James E. (1975) *Associate Professor and Assistant Dean for Administrative Affairs* BS 1968 and MBA 1970 Northeastern University; PhD 1975 Cornell University

Sharp, Julie G. (1994) *Assistant Professor* DDS 1992 University of Nebraska

Strauss, Robert A. (1987) *Associate Professor* BS 1975 and DDS 1979 State University of New York, Buffalo

Clinical Faculty

Alexander	Amrhein
Bissell	Blanchard
Clough	Cuttino
Cyr	Dent
Dolan	Germane
Funari	Green
Hartman	Hennig
Hoard	Hunter
Kenney	Lee
Masters	McMunn
Miller	Murphy
Nelson	O'Neill
Peters	Pirok
Priest	Rubis
Sellers	Shufford
Smilek	Straus
Swanson	Tankersley
Wang	Watts
West	Whitney
Zoghby	

Courses in Oral Surgery (ORS)

ORS 622	Introduction to Oral Surgery
ORS 731	Physical Evaluation and Principles of Medicine
ORS 733	Principles of Oral and Maxillofacial Surgery
ORS 735	Medical Emergencies
ORS 739-749	Clinical Oral Surgery
ORS 741	Special Patient Care

Department of Orthodontics**Robert J. Isaacson**

Professor, Eminent Scholar and Department Chair (1987) BS 1954, DDS 1956, MSD 1961 and PhD 1962 University of Minnesota

Beyer, Jeffrey W. (1997) *Assistant Professor* BS Pennsylvania State University; DDS 1995 and Certificate Orthodontics 1997 Medical College of Virginia of Virginia Commonwealth University

Lindauer, Steven J. (1989) *Associate Professor* BA 1982 University of Pennsylvania; DMD 1986 and MDS Orthodontics 1989 University of Connecticut; DDS 1989 McGill University

Revere, James H., Jr. (1968) *Assistant Professor and Executive Associate Dean for Academic Affairs* BA 1961 University of Richmond; DDS 1965 and Certificate Orthodontics 1988 Medical College of Virginia of Virginia Commonwealth University

Clinical Faculty

Anderson	Brassington
Butterfoss	DuVall
Gills	Kaplan
Wendell	

Courses in Orthodontics (ORT)

ORT 623	Orthodontics
ORT 733	Orthodontic Therapy
ORT 739-749	Clinical Orthodontics

Department of Pediatric Dentistry

Frank H. Farrington

Associate Professor and Department Chair (1977) DDS 1965 and MS 1969 Marquette University

Brownstein, Marshall P. (1975) *Associate Professor and Assistant Dean for Admissions and Student Affairs* BS 1963 and DDS 1967 University of Maryland

Mourino, Arthur P. (1974) *Associate Professor* BS 1965 Georgetown University; MS 1967 Hofstra University; DDS 1972 Georgetown University; MSD 1974 Indiana University

Wood, Alfred Jeffrey (1985) *Associate Professor* BS 1980 Virginia Commonwealth University; DDS 1984 and Certificate 1987 Medical College of Virginia of Virginia Commonwealth University

Clinical Faculty

Adams	Atkins
Avent	Barrett
Biery	Cox
Cook	Gokli
Jones	Keeton
Nach	Pearson
Pope	Rai
Schneider	Shetty
Sorensen	Vitsky
Waitkus	Witcher

Courses in Pediatric Dentistry (PED)

PED 622	Introduction to Pediatric Dentistry
PED 733	Advanced Pediatric Dentistry
PED 739-749	Clinical Pediatric Dentistry

Department of Periodontics

John A. Burmeister

Associate Professor and Department Chair (1977) BA 1965 Wittenberg University; DDS 1970 Ohio State University; MS 1978 Medical College of Virginia of Virginia Commonwealth University

Abbott, David M. (1975) *Associate Professor* BS 1968 Madison College; DDS 1972 University of North Carolina; MSD 1975 University of Minnesota

Butler, James H. (1974) *Professor* BA 1958 Denison University; DDS 1962 Ohio State University; MS 1967 University of Rochester

Califano, Joseph V. (1986) *Associate Professor* BA 1979 Hofstra University; DDS 1984 and PhD 1990 Medical College of Virginia of Virginia Commonwealth University

Koertge, Thomas E. (1982) *Associate Professor* BA 1975 and DMD 1978 Southern Illinois University; PhD 1984 University of Iowa

Sarbin, Alan G. (1982) *Associate Professor* DDS 1957 and MS 1966 Ohio State University; MEd 1988 Virginia Commonwealth University

Schenkein, Harvey A. (1978) *Professor of Periodontics and Microbiology and Immunology and Assistant Dean for Research* BA 1970, DDS 1974 and PhD 1978 State University of New York

Waldrop, Thomas C. (1994) *Associate Professor* BS 1969 University of Georgia; DDS 1973 Medical College of Virginia of Virginia Commonwealth University; MS 1978 University of Texas; Certificate 1978 Wilford Hall Medical Center

Emeriti Faculty

Wiebusch, F. B. *Professor Emeritus* BBA 1943 and DDS 1947 University of Texas

Clinical Faculty

Barco	Block
Chegade	Colasanto

Doswell	Dwevedi
Gooss	Green
Griffin	Hegarty
Kaugars, C.	Kaurich
Mackey	Maynard
Miller	Moskowize
Piche	Ramos
Richardson	Ross
Sweeney	Ziegler

Research Assistants

Williams

Courses in Periodontics (PER)

PER 326	Periodontics (Dental Hygiene)
PER 329	Periodontics II (Dental Hygiene)
PER 626	Periodontics I
PER 629	Periodontics II
PER 733	Periodontics III
PER 739-749	Clinical Periodontics

Department of Prosthodontics

John W. Unger

Professor, Eminent Scholar and Department Chair (1988) AA 1968 Springfield Junior College; BS 1970 and DDS 1972 University of Illinois

Beck, David A. (1980) *Associate Professor* BS 1974 University of New Mexico; DDS 1977 Baylor University; Certificate Prosthodontics 1980 VAMC Wood, W.I.

Burns, David R. (1985) *Associate Professor* BS 1976 Lewis and Clark College; DMD 1980 University of Oregon; Certificate 1985 Emory University

Coffey, James P. (1992) *Associate Professor* BS 1977, DDS 1982 and MS 1984 University of Minnesota

Crabtree, Donald G. (1974) *Assistant Professor* BS 1962 Muskingum College; DDS 1966 Northwestern University

Douglas, Hugh B., Jr. (1982) *Associate Professor* BS 1966 College of William & Mary; DDS 1970 Medical College of Virginia of Virginia Commonwealth University; MS 1974 University of North Carolina

Janus, Charles E. (1981) *Associate Professor* BS 1974 Belmont Abbey College; DDS 1978 Medical College of Virginia of Virginia Commonwealth University

Kazanoglu, Altug (1980) *Associate Professor* DDS 1972 University of Istanbul, Turkey; MS 1977 University of Missouri; DMD 1980 University of Washington

Lynde, Thomas A. (1992) *Assistant Professor* BS 1965 University of Texas, El Paso; DDS 1969 St. Louis University; MS 1974 George Washington University

Tsao, Ding H. (1975) *Associate Professor* BD 1960 Defense Medical Center, China; DDS 1974 State University of New York

Ward, John E. (1976) *Associate Professor* BA 1962 Hanover College; DDS 1966 and MSD 1978 Indiana University

Emeriti Faculty

Bell, Dewey H., Jr. *Professor Emeritus* BS 1948 Wofford College; DDS 1952 Medical College of Virginia

McCasland, John P. *Associate Professor Emeritus* BA 1953 Howard Payne College; DDS 1957 Baylor University

Clinical Faculty

Bui	Cormier
Covaney	Glavan
Jenkins	Kolb
Muncy	Stewart

Courses in Prosthodontics (PRS)

PRS 622	Preclinical Fixed Prosthodontics
PRS 623	Preclinical Complete Denture Prosthodontics
PRS 624	Preclinical Removable Prosthodontics
PRS 627	Diagnostic Impression Lab

PRS 731	Complete Denture Prosthodontics
PRS 735	Removable Partial Denture ñ Lecture
PRS 737	Prosthodontics Diagnosis and Treatment Planning
PRS 739-749	Clinical Removable Prosthodontics
PRS 739-749	Clinical Fixed Prosthodontics
PRS 745	Clinical Principles of Fixed Pros

Conjoint Courses

DEN 510	Scientific Inquiry
DEN 511	Dentistry and Education
DEN 601	Patient Management
DEN 621	Occlusion
DEN 625	Clinical Skills
DEN 733	Geriatric Dentistry (Dental and Dental Hygiene)
DEN 735	Records Management
DEN 741	Head and Neck Pain
DEN 745	Records Management

Courses in the Basic Human Sciences

ANA 301	Head and Neck Anatomy (Dental Hygiene)
ANA 302	Microscopic Anatomy (Dental Hygiene)
ANA 501	Gross Anatomy
ANA 502	Microscopic Anatomy
ANA 503	Neuroanatomy
BIC 501	Biochemistry
BIS 430	Elements of Biometry (Dental Hygiene)
GEN 531	Dental Genetics
MIC 365	Infection and Immunity (Dental Hygiene)
MIC 513	Infection and Immunity in Dentistry
PAT 601	General Pathology
PIO 502	Mammalian Physiology
PMC 441	Pharmacology and Pain Control (Dental Hygiene)
PMC 609	Dental Pharmacology and Pain Control
PMC 611	Dental Pharmacology and Pain Control

XIII

P A R T

School of Education

John S. Oehler, Jr.

Dean, School of Education and Professor of Education (1970) BA Davidson College; MAT and EdD 1973 University of North Carolina

Diane J. Simon

Associate Dean, School of Education and Associate Professor of Special Education (1988) BS Hampton University; MA and PhD 1981 New York University

Thomas A. Hephner

Director, Continuing Education and Field Services, School of Education and Associate Professor of Education (1976) BA 1958 Kent State University; BS, MS and PhD 1972 Ohio State University

The School of Education provides professional preparation for students planning to teach in schools or seek careers in human and community services. All programs combine comprehensive studies in the liberal arts and sciences with professional preparation and concentration in specialized fields of study. Practical applications and field experiences are an integral part of these programs. Each program is designed to contribute to the personal and professional growth of the prospective professional.

Teacher Education Programs

Bachelor's Degree Programs in Education

The School of Education awards a Bachelor of Science degree in health and physical education. The School of the Arts offers Bachelor of Arts in Art and Theatre Education, as well as a Bachelor of Music Education degree. All other programs include a bachelor of arts or a bachelor of science degree from the College of Humanities and Sciences and a Master of Teaching degree from the School of Education.

Extended Teacher Preparation Programs

The School of Education offers extended teacher preparation programs in early, middle, secondary and special education. Five-year courses of study, these programs culminate in the simultaneous awarding of both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education.

A student who enters one of these programs must select an undergraduate major in the College of Humanities and Sciences. These curricula also include

professional education course work. A full description of these programs appears in the Division of Teacher Education section. Students in the program are expected to obtain a student account with Academic Campus Computing in Cabell Library.

Recreation and Exercise Science Programs

Bachelor of Science Degree Programs

The School of Education awards the Bachelor of Science in Recreation, Parks and Tourism, the Bachelor of Science in Health Education and the Bachelor of Science in Physical Education. Within each of these programs distinct professional specialties exist. Several of the specialties have been designed to meet the criteria for professional certification in a variety of employment fields.

Mission

The School of Education is committed to excellence in the initial preparation and continuing development of professionals for leadership, teaching, service, and scholarly inquiry in culturally diverse settings across the life span. The school emphasizes early childhood through secondary education and lifelong learning; scholarship that extends knowledge and improves practice; and collaboration that connects the School of Education to the field of practice and supports schools and relevant educational and human service agencies.

The School of Education, as an integral part of a major urban research university, subscribes to and promotes the following values:

1. The school as an example of the highest quality teaching and learning.
2. The school as a diverse community of learners and scholars who, guided by democratic principles of participation, demonstrate a commitment to:
 - a. High professional standards and sustained faculty development.
 - b. A collaborative approach to teaching, scholarship, and service both within and across disciplines.
 - c. Inquiry that results in the scholarship of application, integration, and teaching, as well as the scholarship of discovery.
 - d. Nurturing national and international relationships.

3. The school as a leader providing quality education for students with individual and diverse needs. The school's graduates:
 - a. demonstrate a body of knowledge from a foundational core appropriate to their specialization(s); and
 - b. exhibit values and behaviors appropriate for effective professional practice in a democratic society.
4. The school as a partner with public and school communities in addressing today's educational challenges.

Degree Programs

Responsibility for the programs of study lies with the three divisions in the School of Education as follows:

- I. Division of Educational Studies
 - Educational Foundations
- II. Division of Health, Physical Education, and Recreation
 - BS Programs in Health Education
 - Teacher Education (K-12)
 - Athletic Training
 - Athletic Training/Pre-Physical Therapy
 - Kinesiotherapy
 - Kinesiotherapy/Pre-Physical Therapy
 - Community Wellness
 - BS Programs in Physical Education
 - Teacher Education (Elementary/Middle/Secondary K-12)
 - Teacher Education (Middle/Secondary, 6-12)
 - Sport Management
 - BS Programs in Recreation, Parks and Tourism
 - Recreation and Park Management
 - Travel and Tourism
 - Therapeutic Recreation
 - Therapeutic Recreation/Pre-Physical Therapy
 - Therapeutic Recreation/Pre-Occupational Therapy
- III. Division of Teacher Education
 - Extended Programs
 - Early Education, NK-5
 - Middle Education, 6-8
 - Secondary Education, 8-12
 - Special Education, K-12
 - Post-Baccalaureate Certificate in Teaching

General Degree Requirements

A student in one of the four-year teacher preparation programs must maintain a minimum cumulative grade-point average (GPA) of 2.5 to be eligible to participate in clinical experiences, and complete a minimum of 129 credits.

A student in any one of the four extended teacher preparation programs must complete a minimum of 160¹ credits. The student must maintain a cumulative GPA of 2.5 for admission to the teacher preparation program,

and upon completion of at least 90 credits, a minimum cumulative GPA of 2.8 is required for that student to be admitted to the graduate studies portion of the extended program.

A student in one of the four-year nonteacher preparation programs must maintain a grade-point average established by the specific program to be eligible to participate in field practica and internships.

A post-baccalaureate certificate in selected teaching shortage areas is open primarily to those who have already earned a master's degree. The candidate must complete at least 24 additional hours beyond the bachelor's level. Admittance to this program requires a minimum cumulative GPA of 2.75.

Descriptions of individual degree programs on the following pages specify the particular courses necessary to fulfill program and degree requirements. In addition to a strong foundation in liberal arts and sciences, all programs require professional education and clinical experience.

Faculty Advisement

A degree-seeking student enrolled in a four-year teacher preparation program is assigned a faculty adviser in the School of Education for health, physical education, and recreation, parks and tourism or in the School of the Arts for art, music, or theatre education. A student enrolled in an extended teacher preparation program is assigned a professional studies adviser in the School of Education and an adviser in the academic major of the College of Humanities and Sciences.

Although advisers will provide timely and accurate assistance, the student is ultimately responsible for satisfying degree requirements in a given academic program. Students in the Extended Program are expected to obtain a student account through Academic Campus Computing so that they may participate in "Dial-a-Prof," electronic mail among students and faculty in Teacher Education. This means of communication can enhance advising when student and faculty schedules are at variance.

Cooperative Education

A qualifying student in the School of Education who is pursuing a degree in teacher preparation may apply to the Cooperative Education Program. A full description of the program appears in Part XX of this *Bulletin*.

Change of Major and Transfer Students

A student with a minimum GPA of 2.0 and 3.0 in the kinesiotherapy track can transfer to a four-year program in the School of Education from another school in the University. *Change of Major* forms are available at the Office of Records and Registration. A transfer student with a minimum GPA of 2.0 is also eligible to become a degree-seeking student in a four-year program in the School of Education. Both change of major and transfer

¹ Students in the 120 credit BA or BS programs in the College of Humanities and Sciences complete a 156 credit program.

students must meet criteria for admission to teacher preparation. Students wishing to enter the Extended Program must transfer initially to the College of Humanities and Sciences, declaring a major in one of the college's departments and a specialization in the appropriate professional studies sequence in the School of Education.

It must be noted, however, that a minimum GPA of 2.5 and a GPA of 3.0 for the Kinesiotherapy Track program is required for admission to clinical experiences and a minimum 2.8 GPA for admission to the graduate phase.

Transcript Evaluation

The Division of Health, Physical Education and Recreation evaluates its prospective students' transcripts for change of major and transfer. The College of Humanities and Sciences evaluates transcripts of all other students pursuing extended teacher preparation programs. Credits are accepted if they conform with specific program guidelines; course equivalents from accredited colleges and universities are accepted if the grade earned is "C" or better. A student must present at least 60 semester hours of acceptable undergraduate course work to be admitted to a teacher preparation program. See specific criteria under the Admission to the Extended Teacher Preparation Programs in this section.

Credits accepted from two-year institutions may meet liberal arts and sciences requirements, but will not meet professional requirements considered "upper-division" course work. The *Virginia Commonwealth University Transfer Guide for Virginia Community Colleges* lists, in full, credits accepted by VCU, but earned in one of the state's community colleges.

After the initial student transcript evaluation, the assigned adviser reviews the accepted transfer credits with the student, determining what additional course work at VCU will be necessary. An adviser is not required to use all the accepted transfer credits in a student's program of study; however, only those credits approved for transfer can be applied toward the chosen degree.

Teacher Licensure

Upon completion of degree requirements in any of VCU's teacher preparation programs and with the recommendation of the School of Education, students are eligible to receive initial teacher licensure from the Virginia State Department of Education. For additional information on licensure, licensure renewal, or add-on endorsement, contact the School of Education's Office of Academic Services.

In Virginia, initial licensure requires successful completion of the Praxis Examinations. Applicants for initial licensure must take the Praxis I Examination and Praxis II Specialty Area Test in the endorsement area in which licensure is sought. In fields where the specialty exam is not available, only the Praxis I Test is required of licensure candidates. Praxis I should be taken prior to application for admission to Teacher Preparation; the specialty examination should typically be taken in one's final semester.

Students should request that their Praxis I and Praxis II Specialty Area Test scores be reported to VCU and the Virginia Department of Education.

Before a recommendation for licensure can be sent to the Teacher Licensure Division of the Virginia Department of Education, these test scores must be on file with the School of Education's Office of Academic Services.

An undergraduate degree holder in another field wishing to obtain teacher licensure should contact the School of Education's Office of Academic Services.

Approved Programs and Certification Reciprocity

All of VCU's initial teacher preparation programs are approved by the Virginia Department of Education and accredited by the Southern Association of Colleges and Schools and the National Council for Accreditation of Teacher Education. VCU's School of Education also holds membership in the American and Virginia Associations of Colleges of Teacher Education, and the Holmes Partnership.

Based on the National Association of State Directors of Teacher Education and Certification agreement, VCU graduates can receive teacher licensure reciprocity with other states. Students interested in licensure reciprocity should contact the School of Education's Office of Academic Services.

Resources

The School of Education has developed various resources to provide support services to students, faculty and the academic programs. These resources are the Office of Academic Services, the Office of Continuing Education and Field Services, and the Instructional Technology Center which includes a computer laboratory and word processing center.

Office of Academic Services

Basic information on the School of Education's degree programs, as well as all forms needed by students as they advance through the programs, are available at the Office of Academic Services.

This office also receives and processes various School of Education application forms and supplies information on the Praxis I Examination, Praxis II Specialty Area Tests, Graduate Record Examination, and the Miller Analogies Test.

This office coordinates clinical placements for students in practica, internships, and externships. Student teachers and graduate intern teachers are placed primarily in school systems and other educational facilities in the greater Richmond metropolitan area.

Scholarship applications and information available to School of Education students can be obtained at the Office of Academic Services. Information on financial aid administered by the University is found in Part III of this *Bulletin*.

Licensure and Endorsement information, materials and applications for Virginia education personnel are

available in the Office of Academic Services. Licensure and endorsement are based in part on the successful completion of an approved program that complies with national standards.

Instructional Technology Center

The Instructional Technology Center, a multimedia center, is used by faculty and students in the School of Education. The workshop houses audio-visual equipment, micro-computers with sophisticated graphics capabilities, educational software, and many similar resources for the development of instructional materials. It also provides computer access to the School of Education's Local Area Network (EDUNET), the University Libraries, and the campus Local Area Network which includes, but is not limited to, VCU mini and mainframe computers and their numerous software packages.

Computer Laboratories

The Computer Laboratory, housed in the Instructional Technology Center, gives students many opportunities to learn about computer-assisted instruction in the classroom setting. It also lends support to students enrolled in the computer science basic literacy course and other computer courses offered by the school. The laboratory equipment includes MacIntosh and IBM compatible multimedia computers (with color monitors and printers). Laser printers and scanners are available.

Also, a University computer laboratory open to all students is housed in Oliver Hall. The laboratory is equipped with IBM and MAC compatible computers that permit students to access the Internet.

Organization

The chief administrative office for the School of Education is the Office of the Dean.

The school itself is separated into three divisions: the Division of Health, Physical Education and Recreation; the Division of Teacher Education; and the Division of Educational Studies. Detailed requirements for each of the programs in these divisions are outlined on the following pages.

Organized for the management of instruction and degree programs, these divisions are headed by a chairperson, while faculty assume responsibility for curriculum and advise by program cores.

Division of Health, Physical Education, and Recreation

Jack H. Schiltz

Professor and Chair, Division of Health, Physical Education and Recreation (1969) BS and MS Southern Illinois University; EdD 1968 Columbia University

Deborah Getty

Assistant Professor of Physical Education and Program Head, Teacher Education (1982) BS State University of New York, College at Cortland; MS University of Arizona; PhD Berkley University

Barney R. Groves

Professor of Physical Education and Program Head, Community Wellness and Rehabilitative Exercise Science (1970) BS Southeastern State College; MS Oklahoma University; PhD 1965 Florida State University

Michael S. Wise

Associate Professor and Program Head, Recreation, Parks and Tourism (1972) BS North Carolina State University; MS Indiana University; EdD 1972 University of Georgia

- Ballinger, Debra A. (1994) *Assistant Professor of Physical Education* BA Elhurst College; MA University of South Florida; MC and PhD 1987 Arizona State University
- Borden, George
- Davis, Robert G. (1973) *Professor of Physical Education* BS Westchester State College; MEd Pennsylvania State University; PhD 1973 University of Maryland
- Dintiman, George B. (1968) *Professor of Physical Education* BS Lock Haven State University; MA New York University; EdD 1964 Columbia University
- Gayle, Richard C. (1986) *Associate Professor of Physical Education* BS College of William & Mary; MS and EdD 1979 University of Tennessee
- Long, Veronica (1997) *Assistant Professor of Recreation, Parks and Tourism* BA Mills College; MA California State University, Chico; PhD 1996 University of Waterloo
- Mills, Allan S. (1987) *Associate Professor of Recreation, Parks and Tourism* BS University of Montana; MS and PhD 1975 University of Minnesota
- Pratt, LeEtta (1978) *Associate Professor of Health Education* BS Brigham Young University; MS Princeton Theological Seminary; EdD 1980 Oregon State University
- Ready, Keith F. (1976) *Associate Professor of Recreation, Parks and Tourism* BS Massachusetts State College; MA Miami University; PhD 1981 Michigan State University
- Reynolds, Ronald P. (1978) *Professor of Recreation, Parks and Tourism* BS State University of New York, Cortland; MS and PhD 1973 University of Illinois, Urbana-Champaign
- Smith, Robin McCollough (1994) *Assistant Professor of Recreation, Parks and Tourism* BS Indiana University; MS George Washington University; EdD 1985 Indiana University

Emeritus Faculty

Charles E. Hartsoe

The Division of Health, Physical Education, and Recreation offers three separate degree programs. The Bachelor of Science in Health Education has six areas of specialty while the Bachelor of Science in Physical Education has two areas of specialty. The Bachelor of Science in Recreation, Parks and Tourism offers tracks in three distinct areas. The 12 advising tracks within the degrees are:

Community Wellness and Rehabilitative Exercise Science

Sport Management (PHE)
Corporate Wellness (HED)
Kinesiotherapy (HED)
Kinesiotherapy with Pre-Physical Therapy Emphasis (HED)
Athletic Training (Sport Medicine) (HED)
Athletic Training (Sport Medicine) with Pre-Physical Therapy Emphasis (HED)

Recreation, Parks and Tourism

Recreation and Park Management (REC)
Travel and Tourism (REC)
Therapeutic Recreation (REC)
Therapeutic Recreation with Pre-Physical or Pre-Occupational Therapy Emphasis (REC)

Teacher Education

Health Education Emphasis (HED)
Physical Education Emphasis (PHE)

The community wellness management and rehabilitative exercise science options prepare the student for health and physical education related careers in private, public, medical, and corporate sectors.

The recreation, parks and tourism program, which is accredited by the National Council on Accreditation, prepares future professionals for the many responsibilities associated with creating and implementing program services and tourism opportunities which serve all citizens.

The teaching option prepares a student for a position in the public school settings where state teacher licensure is required. Completion of the program makes the student eligible for licensure by the Commonwealth of Virginia in health and physical education.

Impending Program Changes

All programs in the Division of Health, Physical Education, and Recreation are evaluated on a continual basis to ensure that the curriculum meets University guidelines and the standards of the various accrediting agencies. In order to maintain the highest standards, curriculum revisions are often necessary. Check with the division office to obtain a copy of the most current program requirements.

General Education Requirements

I. Communicating

- A. Written Communication
Two courses in English (101 and 200)
Writing intensive course in the major
Writing intensive course in major or other department
- B. Oral Communication
SPE 121, 321, OR SLW 230

II. Ethics

Completion of courses which emphasize ethics with special concern in their respective fields.

III. Quantity and Form

- A. Mathematics
- B. Statistics

IV. Science and Technology

Completion of one natural science lecture and corequisite laboratory
Completion of CSC 128, USP 242, OR three credits from BUS 160-164

V. Interdependence

American Studies Elective
Global Studies Elective

VI. Visual and Performing Arts

PHE 235 and/or Visual and Performing Arts Elective (from an approved list)

VII. Humanities and Sciences

Humanities/Social Science Electives (from an approved list)

PROGRAM REQUIREMENTS IN HEALTH AND PHYSICAL EDUCATION: TEACHING

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I	3
ENG 200	Composition and Rhetoric II	3
	Oral Communication Elective	3
	American Studies Elective	3
	Global Studies Elective	3
	Social Science Elective	3
	Social Science Elective	3
	Humanities OR Social Science Elective	3
MAT 131	Introduction to Contemporary Mathematics or equivalent	3
CSC 128	Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101,L101	Life Science and Laboratory	4
	Visual and Performing Arts Elective(s)	1
		<hr/> 35
Physical Education Core		
PHE 190	History and Philosophy of Health and Physical Education	3
PHE 330	Motor Behavior	3
PHE 391	Elementary Physical Education for Physical Education Teachers	3
PHE 392	Kinesiology	3
PHE 432	Movement Education	3
PHE 433	Psychosocial Aspects of Sport and Physical Activity	3
PHE 492	Physiology of Exercise	3
PHE 493	Tests and Measurements in Health and Physical Education	3
PHE 495	Adaptive Physical Education	3
		<hr/> 27
Health Education Core		
HED 480	Safety, First Aid and CPR	3
	Select 5 of the following 6:	15
HED 386	School and Community Health Resources (3)	
HED 400	Nutrition (3)	
HED 410	Issues in Sexuality (3)	
HED 420	Substance Abuse (3)	
HED 430	Trends in Modern Diseases (3)	
HED 487	Coping and Adaptation (3)	
		<hr/> 18
Professional Education Core		
EDU 300	Foundations of Education	3
EDU 301	Human Development and Learning	3
BIO 205, L205	Human Anatomy and Laboratory	4
BIO 206,L206	Human Physiology and Laboratory	4
PHE 397	Methods in Health and Physical Education	3
PHE 398	Curriculum in Health and Physical Education	3
		<hr/> 20
Professional Activity Core		
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility Training	1
PHE 230	Gymnastics	1
PHE 234	Elementary Rhythmics	1
PHE 235	Social Rhythmics	1
REC 300	Wilderness Education I	1
	Team Sport (select 3 credits)	3
PHE 202	Basketball (1)	
PHE 204	Softball (1)	
PHE 208	Volleyball (1)	
PHE 210	Field Hockey (1)	
PHE 212	Soccer (1)	
	Individual/Dual/Recreational Sports (select 3 credits)	3
PHE 214	Wrestling/Flag Football (1)	
PHE 216	Tennis (1)	

PHE 226	Recreational Sports/Indoor Racquet Sports (1)	
PHE 227	Archery/Badminton/Bowling (1)	
PHE 233	Track and Field (1)	
		12
Clinical Experiences		
PHE 310	Early Professional Experience	1
PHE 494	Topical Seminar or other approved professional experience	1
EDU 310	Practicum*	3
EDU 485	Supervised Teaching I:Elementary Physical Education	6
EDU 486	Supervised Teaching II:Middle/Secondary Physical Education	6
		17
Total Credits		129

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics)
Praxis II:Specialty Area (Physical Education)
Application and admission to Professional Preparation (A 2.5 GPA is required.)
- † Application to Student Teaching (A 2.5 GPA is required.)
(Should be completed and submitted to the student teaching supervisor by specified deadlines the semester preceding fieldwork.)

PROGRAM REQUIREMENTS IN COMMUNITY WELLNESS

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I	3
ENG 200	Composition and Rhetoric II	3
	Oral Communication Elective	3
	American Studies Elective	3
	Global Studies Elective	3
	Psychology Elective	3
	Social Science Elective	3
	Psychology Elective	3
MAT 131	Introduction to Contemporary Mathematics OR equivalent	3
STA 208	Statistical Thinking or equivalent	3
CSC 128	Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101,L101	Life Science and Laboratory	4
	Visual and Performing Arts Elective(s)	2
		39

Health and Physical Education

HED/PHE 190	History and Philosophy of Health and Physical Education	3
HED/PHE 493	Tests and Measurements in Health and Physical Education	3
HED 386	School and Community Health Resources	3
HED 400	Nutrition	3
HED 480	Safety, First Aid and CPR	3
	Select three of the following seven courses:	9
HED 325	Treatment of Athletic Injuries (3)	
HED 410	Issues in Sexuality (3)	
HED 420	Substance Abuse (3)	
HED 430	Trends in Modern Diseases (3)	
HED 487	Coping and Adaptation (3)	
PHE 431	Seminar in Fitness Programs (3)	
PHE 495	Adaptive Physical Education (3)	
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility	1
PHE 392	Kinesiology	3
PHE 492	Physiology of Exercise	3
		32

Professional Core

BIO 205, L205	Human Anatomy and Laboratory	4
BIO 206,L206	Human Physiology and Laboratory	4

Additional related professional core courses selected with adviser	15
	23

Clinical Experience

HED/PHE 310	Early Professional Experience	1
EDU 310	Practicum*	3
EDU 487	Fieldwork I †	6
EDU 488	Fieldwork II †	6
		16

General Electives

	19
--	----

Total Credits

	129
--	------------

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics)
Application and Admission to Professional Preparation (A 2.5 GPA is required.)
- † Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)

PROGRAM REQUIREMENTS IN KINESIOTHERAPY**General Education**

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I	3
ENG 200	Composition and Rhetoric II	3
	Oral Communication Elective	3
	American Studies Elective	3
	Global Studies Elective	3
PSY 101,L101	Introduction to Psychology and Laboratory ^Δ	4
PSY 304	Life Span Developmental Psychology	3
MAT 131	Introduction to Contemporary Mathematics or equivalent	3
STA 208	Statistical Thinking or equivalent ^Δ	3
CSC 128	Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101, L101	Life Science and Laboratory	4
	Visual and Performing Arts Elective(s)	2
		37

Health and Physical Education

HED/PHE 190	History and Philosophy of Health and Physical Education	3
HED 300	Introduction to Health Education	3
HED 325	Treatment of Athletic Injuries	3
HED L325	Taping Techniques Laboratory	1
HED 382	Introduction to Driver Education	3
HED 425	Advanced Treatment of Athletic Injuries	3
HED 426	Therapeutic Modalities	3
HED 482	Methods in Driver Education	3
HED 487	Coping and Adaptation	3
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility	1
PHE 392	Kinesiology ^Δ	3
PHE 492	Physiology of Exercise ^Δ	3
		33

Professional Core

BIO 205, L205	Human Anatomy and Laboratory ^Δ	4
BIO 206,L206	Human Physiology and Laboratory	4
CHE 103	Introduction to Modern Chemistry OR CHE 110 Chemistry and Society	3
PHY 101	Foundations of Physics OR PHY 107 Wonders of Technology	3
HED 480	Safety, First Aid and CPR ^Δ	3
PHE 330	Motor Behavior ^Δ	3
PHE 401	Clinical Applications in Exercise Science	3
PHE 402	Exercise Intervention in Exercise Science	3
PHE 495	Adaptive Physical Education ^Δ	3

REC 403	Management of Park and Recreation Agencies ^Δ 3	
PSY 401	Physiological Psychology	3
PSY 407	Psychology of the Abnormal	3
		38

Clinical Experiences

EDU 310	Practicum*	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		15

General Electives

		6
--	--	---

Total Credits

129

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics)
Application and Admission to Professional Preparation (A 3.0 GPA is required.)
- [†] Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)
- ^Δ General Core Requirements of AKTA. (A grade of "C" or above is required.)

PROGRAM REQUIREMENTS IN KINESIOTHERAPY/PRE-PHYSICAL THERAPY**General Education**

	<i>Credits</i>
ENG 101 Composition and Rhetoric I ^Δ	3
ENG 200 Composition and Rhetoric II ^Δ	3
Oral Communication Elective ^Δ	3
American Studies Elective (HIS 103 OR 104) ^Δ	3
Global Studies Elective	3
PSY 101/L101 Introduction to Psychology and Laboratory ^{Δ†}	4
PSY 304 Life Span Developmental Psychology ^Δ	3
MAT 131 Introduction to Contemporary Mathematics OR equivalent or higher ^Δ	3
STA 210 Basic Practice of Statistics ^{Δ†}	3
CSC 128 Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101,L101 Life Science and Laboratory OR BIO 151,L151 Introduction to Biological Science I and Laboratory ^Δ	4
Visual and Performing Arts Elective(s)	2
	37

PPT Professional Core

BIO 102,L102 Science of Heredity and Laboratory OR BIO 152,L152 Introduction to Biological Science II and Laboratory ^Δ	4
BIO 206, L206 Human Physiology and Laboratory ^{Δ†}	4
PHY 201,L201 General Physics and Laboratory ^Δ	4
PHY 202,L202 General Physics and Laboratory ^Δ	4
CHE 101,L101 General Chemistry I and Laboratory ^Δ	5
CHE 102,L102 General Chemistry II and Laboratory ^Δ	5
	26

Health and Physical Education

HED/PHE 190 History and Philosophy of Health and Physical Education	3
HED 300 Introduction to Health Education	3
HED 325 Treatment of Athletic Injuries	3
HED L325 Taping Techniques Laboratory	1
HED 382 Introduction to Driver Education	3
HED 425 Advanced Treatment of Athletic Injuries	3
HED 426 Therapeutic Modalities	3
HED 482 Methods in Driver Education	3
HED 487 Coping and Adaptation	3
PHE 200 Strength and Speed Training	1
PHE 201 Endurance and Flexibility	1

PHE 392	Kinesiology [‡]	3
PHE 492	Physiology of Exercise [‡]	3
		33

Professional Core

BIO 205,L205	Human Anatomy and Laboratory [‡]	4
HED 480	Safety, First Aid and CPR [‡]	3
PHE 330	Motor Behavior [‡]	3
PHE 401	Clinical Applications in Exercise Science	3
PHE 402	Exercise Intervention in Exercise Science	3
PHE 495	Adaptive Physical Education [‡]	3
REC 403	Management of Park and Recreation Agencies [‡]	3
PSY 401	Physiological Psychology ^Δ	3
PSY 407	Psychology of the Abnormal	3

Clinical Experiences

EDU 310	Practicum *	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		15

Total Credits

139

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics)
- [†] Application and Admission to Professional Preparation (A 3.0 GPA is required.)
Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)
- ^Δ Required for Pre-Physical Therapy.
- [‡] General Core Requirements of AKTA. (A grade of "C" or above is required.)

PROGRAM REQUIREMENTS IN KINESIOTHERAPY/PRE-OCCUPATIONAL THERAPY**General Education**

	<i>Credits</i>
ENG 101 Composition and Rhetoric I [‡]	3
ENG 200 Composition and Rhetoric II [‡]	3
Oral Communication Elective [‡]	3
American Studies Elective [‡]	3
Global Studies Elective	3
PSY 101, L101 Introduction to Psychology and Laboratory ^{‡Δ}	4
PSY 304 Life Span Developmental Psychology [‡]	3
MAT 131 Introduction to Contemporary Mathematics OR equivalent [‡]	3
STA 210 Basic Practice of Statistics ^{‡Δ}	3
CSC 128 Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101,L101 Life Science and Laboratory [‡]	4
Visual and Performing Arts Elective(s)	2
	37

Pre-Occupational Therapy Core

BIO 205, L205	Human Anatomy and Laboratory ^{‡Δ}	4
BIO 206,L206	Human Physiology and Laboratory ^{‡Δ}	4
PSY 401	Physiological Psychology [‡]	3
PSY 407	Psychology of the Abnormal [‡]	3
SOC 101	General Sociology [‡]	3
Sociology Elective [‡]		3
		20

Health and Physical Education

HED/PHE 190	History and Philosophy of Health and Physical Education	3
HED 300	Introduction to Health Education	3
HED 325	Treatment of Athletic Injuries	3
HED L325	Taping Techniques Laboratory	1

HED 382	Introduction to Driver Education	3
HED 425	Advanced Treatment of Athletic Injuries	3
HED 426	Therapeutic Modalities	3
HED 482	Methods in Driver Education	3
HED 487	Coping and Adaptation	3
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility	1
PHE 392	Kinesiology ^Δ	3
PHE 492	Physiology of Exercise ^Δ	3
		<hr/>
		33

Professional Core

CHE 103	Introduction to Modern Chemistry OR CHE 110 Chemistry and Society	3
PHY 101	Foundations of Physics OR PHY 107 Wonders of Technology	3
HED 480	Safety, First Aid and CPR ^Δ	3
PHE 330	Motor Behavior ^Δ	3
PHE 401	Clinical Applications in Exercise Science	3
PHE 402	Exercise Intervention In Exercise Science	3
PHE 495	Adaptive Physical Education ^Δ	3
REC 403	Management of Park and Recreation Agencies ^Δ	3
		<hr/>
		24

Clinical Experiences

EDU 310	Practicum *	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		<hr/>
		15

Total Credits**129****Additional Requirements**

* Praxis I (Reading, Writing, Mathematics)
Application and Admission to Professional Preparation (A 3.0 GPA is required.)

[†] Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)

^Δ General Core Requirements of AKTA. (A grade of "C" or above required.)

[‡] Required for Pre-Occupational Therapy.

PROGRAM REQUIREMENTS IN ATHLETIC TRAINING

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I	3
ENG 200	Composition and Rhetoric II	3
Oral Communication Elective		3
American Studies Elective		3
Global Studies Elective		3
Social Science Elective		3
Social Science Elective		3
Humanities OR Social Science Elective		3
MAT 131	Introduction to Contemporary Mathematics OR equivalent	3
STA 208	Statistical Thinking or equivalent	3
CSC 128	Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101, L101	Life Science and Laboratory	4
Visual and Performing Arts Elective(s)		2
		<hr/>
		39

Health and Physical Education

HED/PHE 190	History and Philosophy of Health and Physical Education	3
HED 300	Introduction to Health Education	3
HED/PHE 493	Tests and Measurements in Health and Physical Education	3
HED 400	Nutrition	3
HED 480	Safety, First Aid and CPR	3

HED 325	Treatment of Athletic Injuries	3
HED L325	Techniques in Taping Laboratory	1
HED 386	School and Community Health Resources	3
Select two of the following six courses:		6
HED 410	Issues in Sexuality (3)	
HED 420	Substance Abuse (3)	
HED 430	Trends in Modern Diseases (3)	
HED 431	Seminar in Fitness Programs (3)	
HED 487	Coping and Adaptation (3)	
PHE 495	Adaptive Physical Education (3)	
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility Training	1
PHE 392	Kinesiology	3
PHE 492	Physiology of Exercise	3
		<hr/>
		36

Professional Core

BIO 205	Human Anatomy	4
BIO 206	Human Physiology	4
CHE 110	Chemistry and Society OR PHY 107 Wonders of Technology	3
HED 425	Advanced Treatment of Athletic Injuries	3
HED 426	Therapeutic Modalities	3
Additional related professional core courses selected with adviser		8
		<hr/>
		25

Clinical Experience

HED/PHE 310	Early Professional Experience	1
EDU 310	Practicum *	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		<hr/>
		16

General Electives

13

Total Credits**129****Additional Requirements**

* Praxis I (Reading, Writing, Mathematics)

* Application and Admission to Professional Preparation
(A 2.5 GPA is required.)

[†] Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)

PROGRAM REQUIREMENTS IN ATHLETIC TRAINING/PRE-PHYSICAL THERAPY

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I ^Δ	3
ENG 200	Composition and Rhetoric II ^Δ	3
Literature Elective ^Δ		3
Global Studies Elective		3
American Studies Elective ^Δ		3
PSY 101, L101	Introduction to Psychology and Laboratory ^Δ	4
Psychology Elective ^Δ		3
Social Science Elective ^Δ		3
MAT 131	Introduction to Contemporary Mathematics ^Δ	3
STA 210	Basic Practice of Statistics ^Δ	3
CSC 128	Computer Concepts and Applications OR 3 credits from BUS 160-168	3
BIO 101, L101	Life Science and Laboratory OR BIO 151, L151 Introduction to Biological Sciences and Laboratory ^Δ	4
Visual and Performing Arts Elective(s)		2
		<hr/>
		40

PPT Professional Core

BIO 206, L206	Human Physiology and Laboratory ^Δ	4
---------------	----------------------------------------------	---

BIO 102,L102	Science and Heredity and Laboratory	
	OR BIO 152, L152 Introduction to Biological	
	Sciences II and Laboratory ^Δ	4
CHE 101,L101	General Chemistry and Laboratory ^Δ	5
CHE 102,L102	General Chemistry and Laboratory ^Δ	5
PHY 201,L201	General Physics and Laboratory ^Δ	4
PHY 202, L202	General Physics and Laboratory ^Δ	4
		26

Health and Physical Education

HED/PHE 190	History and Philosophy of Health and Physical Education	3
HED 300	Introduction to Health Education	3
HED/PHE 493	Tests and Measurements in Health and Physical Education	3
HED 400	Nutrition	3
HED 480	Safety, First Aid and CPR	3
HED 325	Treatment of Athletic Injuries	3
HED L325	Techniques in Taping Laboratory	1
HED 386	School and Community Health Resources	3
	Select two of the following six courses:	6
	HED 410 Issues in Sexuality (3)	
	HED 420 Substance Abuse (3)	
	HED 430 Trends in Modern Diseases(3)	
	HED 431 Seminar in Fitness Programs (3)	
	HED 487 Coping and Adaptation (3)	
	PHE 495 Adaptive Physical Education (3)	
PHE 200	Strength and Speed Training	1
PHE 201	Endurance and Flexibility Training	1
PHE 392	Kinesiology	3
PHE 492	Physiology of Exercise	3
		36

Professional Core

BIO 205,L205	Human Anatomy and Laboratory	4
HED 425	Advanced Treatment of Athletic Injuries	3
HED 426	Therapeutic Modalities	3
		10

Clinical Experiences

HED/PHE 310	Early Professional Experience	1
PHE 494	Topical Seminar or approved professional experience	1
EDU 310	Practicum *	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		17

Total Credits

129

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics) Application and Admission to Professional Preparation (A 2.5 GPA is required.)
- [†] Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)
- ^Δ Required for Pre-Physical Therapy.

PROGRAM REQUIREMENTS IN SPORT MANAGEMENT

General Education	Credits
ENG 101 Composition and Rhetoric I	3
ENG 200 Composition and Rhetoric II	3
Literature Elective	3
Oral Communication Elective	3
American Studies Elective	3
Global Studies Elective	3
Social Science Elective	3
Social Science Elective	3

MAT 131	Introduction to Contemporary Mathematics	
	OR equivalent	3
STA 208	Statistical Thinking or equivalent	3
CSC 128	Computer Concepts and Applications	
	OR 3 credits from BUS 160-168	3
	Natural Science Elective with laboratory	4
	Visual and Performing Arts Elective(s)	2
		39

Business Core

ECO 203	Introduction to Economics	3
BUS 202	Accounting for Non-business Majors	3
BUS 308	Introduction to Marketing (JR)	3
BUS 323	Legal Environment of Business (JR)	3
BUS 333	Risk and Insurance	3
BUS 331	Personnel Management (JR)	3
BUS 421	Small Business Management	3
		21

Mass Communications Core

MAC 101	Mass Communications (FR)	3
MAC 203	Newswriting (SO)	3
	Select two of the three following:	6
	MAC 323 Public Relations (3)	
	MAC 361 Principles of Broadcasting (3)	
	MAC 380 Introduction to Advertising (3)	
		12

Health and Physical Education Core

HED/PHE 190	History and Philosophy of Health and Physical Education	3
PHE 340	Introduction to Sport Management	3
PHE 440	Administration of Sport Facilities	3
PHE 441	Law and Sport	3
PHE 382	Survey of Kinesiology and Physiology of Exercise	3
PHE 430	Sport Psychology	3
Team Sport		1
Team Sport		1
Individual Sport		1
Individual Sport		1
HED 300	Introduction to Health Education	3
HED 480	Safety, First Aid and CPR	3
		28

Clinical Experience

HED/PHE 310	Early Professional Experience	1
EDU 310	Practicum *	3
EDU 487	Fieldwork I [†]	6
EDU 488	Fieldwork II [†]	6
		16

Electives

General Electives ^Δ	9
Approved Electives – Adviser must approve	4
	13

Total Credits

129

Additional Requirements

- * Praxis I (Reading, Writing, Mathematics) Application and Admission to Professional Preparation (A 2.5 GPA is required.)
- [†] Application to Fieldwork (Should be completed and submitted to the internship coordinator by mid-term of the semester preceding fieldwork.)
- (FR) Recommended to be taken in the freshman year.
- (SO) Recommended to be taken in the sophomore year.
- (JR) Must be taken in the junior year or later.

^Δ A minor in business can be attained by taking these three courses as electives:

- BUS 311 Financial Management
- BUS 319 Organizational Behavior
- BUS 360 Business Information Systems

NOTE: All Business transfer courses must be approved by the School of Business Undergraduate Studies Office (828-3710).

The Sport Management program is the result of an interdisciplinary effort of the Schools of Education, Mass Communication, Business and the Department of Athletics.

PROGRAM REQUIREMENTS IN RECREATION AND PARK MANAGEMENT

General Education	<i>Credits</i>
ENG 101 Composition and Rhetoric I	3
ENG 200 Composition and Rhetoric II	3
Writing Intensive Elective	3
MAT 131 Introduction to Contemporary Mathematics OR equivalent	3
STA 208 Statistical Thinking or equivalent	3
CSC 128 Computer Concepts and Applications, USP 242,OR 3 credits from BUS 160-168	3
Natural/Physical Science with Laboratory	4
Social Science Elective	3
Social Science Elective	3
American Studies Elective	3
Global Studies Elective	3
Oral Communication Elective	3
Visual and Performing Arts Elective(s)	2
	39

Recreation, Parks and Tourism Core	<i>Credits</i>
REC 195 Recreation Leadership	3
REC 261 Recreation, Parks and Tourism in Modern Society	3
REC 303 Leisure Delivery Systems	3
REC 320 Recreation Analysis *	3
REC 395 Recreation Program Development *	3
REC 403 Recreation, Parks and Tourism Administration *	3
	18

Professional Core	<i>Credits</i>
REC 331 Facility/Site Selection/Analysis	3
REC 332 Facility/Site Design/Development *	3
REC 404 Revenue Sources in Recreation, Parks and Tourism *	3
REC 465 Park Operations/Maintenance	3
REC 490 Seminar *	3
REC 493 Internship *	8
HPER Electives	6
	29

Open Electives 13-19

Concentration or Minor 18-24

With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:

Criminal Justice	18 hours
Social Welfare	18 hours
Urban Studies	18 hours
Health Education	18 hours
General Business	21 hours
Environmental Studies	24 hours

Total Credits 123

* At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

PROGRAM REQUIREMENTS IN TRAVEL AND TOURISM

General Education	<i>Credits</i>
ENG 101 Composition and Rhetoric I	3
ENG 200 Composition and Rhetoric II	3
Writing Intensive Elective	3
MAT 131 Introduction to Contemporary Mathematics OR equivalent	3
STA 208 Statistical Thinking or equivalent	3
CSC 128 Computer Concepts and Applications, USP 242,OR 3 credits from BUS 160-168	3
Natural/Physical Science with Laboratory	4
Social Science Elective	3
Social Science Elective	3
American Studies Elective	3
Global Studies Elective	3
Oral Communication Elective	3
Visual and Performing Arts Elective(s)	2
	39

Recreation, Parks and Tourism Core	<i>Credits</i>
REC 195 Recreation Leadership	3
REC 261 Recreation, Parks and Tourism in Modern Society	3
REC 303 Leisure Delivery Systems	3
REC 320 Recreation Analysis *	3
REC 395 Recreation Program Development *	3
REC 403 Recreation, Parks and Tourism Administration	3
	18

Professional Core	<i>Credits</i>
REC 341 Introduction to Travel and Tourism *	3
REC 404 Revenue Sources for Recreation, Parks and Tourism *	3
REC 442 Group Travel Management	3
REC 445 Conference and Convention Planning	3
REC 490 Seminar *	3
REC 493 Internship *	8
REC 510 Tourism Policy *	3
HPER Elective	3
	29

Open Electives 13-19

Concentration or Minor 21-24

With approval of adviser, students can select an 21-24 hour concentration of upper-division course work or one of the following minors:

General Business	21 hours
Spanish	21 hours
Environmental Studies	24 hours
History	21 hours
French	21 hours
Geography	21 hours
German	21 hours

Total Credits 123

* At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

PROGRAM REQUIREMENTS IN THERAPEUTIC RECREATION

General Education	<i>Credits</i>
ENG 101 Composition and Rhetoric I	3
ENG 200 Composition and Rhetoric II	3
Writing Intensive Requirement	3
MAT 131 Introduction to Contemporary Mathematics OR equivalent	3
STA 208 Statistical Thinking or equivalent	3
CSC 128 Computer Concepts and Applications, USP 242,OR 3 credits from BUS 160-168	3

BIO 101,L101 Life Science and Laboratory	4
PSY 101,L101 Introduction to Psychology and Laboratory	4
Social Science Elective	3
American Studies Elective	3
Global Studies Elective	3
Oral Communication Elective	3
Visual and Performing Arts Elective(s)	2
	<hr/>
	40

Recreation, Parks and Tourism Core

REC 195 Recreation Leadership	3
REC 261 Recreation, Parks and Tourism in Modern Society	3
REC 303 Leisure Delivery Systems	3
REC 320 Recreation Analysis*	3
REC 395 Recreation Program Development*	3
REC 403 Recreation, Parks and Tourism Administration*	3
	<hr/>
	18

Professional Core

BIO 205 Human Anatomy	4
BIO 206 Human Physiology	4
EDU 301 Human Development and Learning	3
REC 371 Introduction to Therapeutic Recreation	3
REC L371 Introduction to Therapeutic Recreation Laboratory	1
PSY 407 Psychology of the Abnormal	3
REC 472 Therapeutic Recreation Program Development*	3
REC 471 Clinical Assessment*	3
REC 493 Internship*	8
REC 506 Contemporary Issues*	3
	<hr/>
	35

Open Electives

12

Concentration or Minor

18

With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:

Criminal Justice	18 hours
Psychology	18 hours
Social Welfare	18 hours
Health Education	18 hours

Total Credits

123

* At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

PROGRAM REQUIREMENTS IN THERAPEUTIC RECREATION/PRE-PHYSICAL THERAPY

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I*	3
ENG 200	Composition and Rhetoric II*	3
	Writing Intensive Requirement	3
MAT 131	Introduction to Contemporary Mathematics OR equivalent*	3
STA 210	Basic Practice of Statistics*	3
CSC 128	Computer Concepts and Applications, USP 242,OR 3 credits from BUS 160-168	3
BIO 101, L101	Life Science and Laboratory* OR BIO 151,L151 Introduction to Biological Science I and Laboratory	4
PSY 101,L101	Introduction to Psychology and Laboratory*	4
	Social Science Elective*	3
	American Studies Elective*	3
	Global Studies Elective	3
	Oral Communication Elective	3
	Visual and Performing Arts Elective(s)	2
	<hr/>	
		40

Pre-Physical Therapy Core

BIO 102,L102 Life Science II and Laboratory*	
OR BIO 152,L152 Introduction to Biological Science II and Laboratory	4
PHY 201, L201 General Physics and Laboratory*	4
PHY 202,L202 General Physics and Laboratory*	4
CHE 101,L101 General Chemistry I and Laboratory*	5
CHE 102,L102 General Chemistry II and Laboratory*	5
	<hr/>
	22

Recreation, Parks and Tourism Core

REC 195 Recreation Leadership	3
REC 261 Recreation, Parks and Tourism in Modern Society	3
REC 303 Leisure Delivery Systems	3
REC 320 Recreation Analysis †	3
REC 395 Recreation Program Development †	3
REC 403 Recreation, Parks and Tourism Administration †	3
	<hr/>
	18

Professional Core

BIO 205,L205 Human Anatomy and Laboratory	4
BIO 206, L206 Human Physiology and Laboratory *	4
PSY 304 Lifespan Development	3
REC 371 Introduction to Therapeutic Recreation	3
REC L371 Introduction to Therapeutic Recreation Laboratory	1
PSY 407 Psychology of the Abnormal *	3
REC 472 Therapeutic Recreation Program Development †	3
REC 471 Clinical Assessment †	3
REC 493 Internship †	8
REC 506 Contemporary Issues †	3
	<hr/>
	35

Concentration or Minor

14

With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:

Criminal Justice	18 hours
Social Welfare	18 hours
Psychology	18 hours
Health Education	18 hours

Social Science Elective (300-400-level)*

3

Total Credits

132

* Required for Pre-Physical Therapy

† At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

PROGRAM REQUIREMENTS IN THERAPEUTIC RECREATION/PRE-OCCUPATIONAL THERAPY

General Education		<i>Credits</i>
ENG 101	Composition and Rhetoric I*	3
ENG 200	Composition and Rhetoric II*	3
	Writing Intensive Requirement	3
MAT 131	Introduction to Contemporary Mathematics OR equivalent*	3
STA 210	Basic Practice of Statistics*	3
CSC 128	Computer Concepts and Applications, USP 242,OR 3 credits from BUS 160-168	3
BIO 101,L101	Life Science and Laboratory*	4
PSY 101,L101	Introduction to Psychology and Laboratory*	4
SOC 101	General Sociology*	3
	American Studies Elective*	3
	Global Studies Elective	3
	Oral Communication Elective	3
	Visual and Performing Arts Elective(s)	2
	<hr/>	
		40

Recreation, Parks and Tourism Core

REC 195	Recreation Leadership	3
REC 261	Recreation, Parks and Tourism in Modern Society	3
REC 303	Leisure Delivery Systems	3
REC 320	Recreation Analysis †	3
REC 395	Recreation Program Development †	3
REC 403	Recreation, Parks and Tourism Administration †	3

18

Professional Core

BIO 205,L205	Human Anatomy and Laboratory*	4
BIO 206,L206	Human Physiology and Laboratory*	4
PSY 304	Life Span Developmental Psychology*	3
REC 371	Introduction to Therapeutic Recreation	3
REC L371	Introduction to Therapeutic Recreation Laboratory	1
PSY 407	Psychology of the Abnormal*	3
REC 472	Therapeutic Recreation Program Development †	3
REC 471	Clinical Assessment †	3
REC 493	Internship †	8
REC 506	Contemporary Issues †	3

35

Electives

Open Electives	6
Sociology Elective (OR ANT 103)*	3
Psychology Elective*	3

12

Concentration or Minor

18

With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:

Criminal Justice	18 hours
Social Welfare	18 hours
Psychology	18 hours
Health Education	18 hours

Total Credits

123

* Required for Pre-Occupational Therapy

† At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

Minors in Health Education or Physical Education

See the division chair for approved course work for a minor in health education or physical education.

Minor in Recreation, Parks and Tourism

REC 195	Recreation Leadership	3
REC 261	Recreation, Parks and Tourism in Modern Society	3
REC 303	Leisure Delivery Systems	3
REC 395	Recreation Program Development*	3
Recreation electives selected in consultation with the recreation program head.		6

18

* At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

Master of Science in Physical Education or Recreation, Parks and Tourism

The Master of Science in Physical Education and the Master of Science in Recreation, Parks and Tourism are designed to provide advanced educational preparation for practitioners and students pursuing careers in public school health and physical education, exercise science, and diverse leisure settings and agencies. All programs focus on the exploration of theoretical foundations and the development and application of specialized professional knowledge, skills, and abilities. These master's degrees require 33-36 credit hours. See *Graduate Bulletin* for a more detailed description of these programs.

Division of Teacher Education**Alan M. McLeod**

Professor and Division Chair (1969) BA Washington and Lee University; MEd and EdD 1969 University of Virginia

Alder, Nora (1996) *Assistant Professor of Teacher Education* BA and MA Oklahoma City University; EdD 1996 University of Nevada

Boraks, Nancy E. (1973) *Associate Professor* BS Boston State Teacher's College; MA Washington State University; PhD 1973 University of Colorado

Boyle, Joseph R. (1997) *Assistant Professor of Special Education* BS and MS Pennsylvania State University; PhD 1993 University of Kansas

Carlotti, Debra (1989) *Instructor and Director, Virginia Commonwealth University Child Care Center* BA Brooklyn College; MEd 1980 Temple University

Christenbury, Leila (1986) *Professor of English Education* BA Hollins College; MA University of Virginia; EdD 1980 Virginia Polytechnic Institute and State University

Davis, Michael D. (1979) *Professor* BS Buffalo State College; MEd University of Buffalo; PhD 1975 University of Illinois

Duncan, Patricia H. (1971) *Professor of Elementary Education* BS Millersville State College; MEd and EdD 1970 University of Georgia

Fox, Jill E. (1994) *Assistant Professor* BS Western Kentucky University; MEd Texas Women's University; PhD 1993 University of North Texas

Garner, Howard G. (1973) *Professor* BA University of North Carolina; MEd and PhD 1970 University of Florida

Gerber, Paul*

Giacobbe, George A. (1975) *Associate Professor* BA University of Tulsa; MEd American University; PhD 1973 University of Georgia

Gross, Ena (1979) *Associate Professor* BS Taylor University; MEd and PhD 1980 Georgia State University

Heubach, Kathleen (1995) *Assistant Professor* BA and MA University of North Florida; PhD 1995 University of Georgia

Hootstein, Edward (1996) *Assistant Professor of Teacher Education* BS University of Vermont; MA San Diego State University; PhD 1993 University of Oregon

Judd, William J. (1976) *Associate Professor* BS State University of New York, Cortland; MS and PhD 1973 Syracuse University

Kregel, John J. (1983) *Professor of Special Education* BA Coe College; MS University of Kansas; EdD 1983 University of Georgia

Lambie, Rosemary*

Lohr, Michael*

Oehler, John S., Jr. (1970) *Professor and Dean* BA Davidson College; MAT and EdD 1973 University of North Carolina

Orelove, Fred P. (1981) *Professor of Education and Director, Virginia Institute for Developmental Disabilities* BS, AM and PhD 1978 University of Illinois

Reed, Daisy F. (1976) *Professor* BS Teacher's College; DC Teacher's College; MA George Washington University; MS and EdD 1975 Columbia University, Teacher's College

Rezba, Richard J. (1976) *Professor* BA University of Florida; MST University of Florida; MAT and PhD 1971 Indiana University

Rhea, Laura *Teacher-in-Residence* BA Mercyhurst College; MEd 1993 Clarion University of Pennsylvania

Richardson, Judy S. (1979) *Professor* BA University of North Carolina, Greensboro; MEd and PhD 1975 University of North Carolina, Chapel Hill

Rossi, John A. (1993) *Assistant Professor* BA University of California; MEd University of Washington; PhD 1993 University of Wisconsin
 Savitt, Charles M. (1997) *Assistant Professor of Teacher Education* MEd University of Connecticut; PhD 1996 Arizona State University
 Simon, Diane J. (1988) *Associate Professor of Special Education and Associate Dean* BS Hampton University; MA and PhD 1981 New York University
 Van de Walle, John A. (1973) *Professor* BA Bellarmine College; MS St. Louis University; PhD 1972 Ohio State University
 Wehman, Paul*
 White, Doris A. (1978) *Associate Professor* BS Tennessee A & I State University; EdM and EdD 1971 University of Illinois
 Wood, Judith W. (1980) *Professor of Special Education* BS, MEd and PhD 1979 University of Southern Mississippi

Emeriti Faculty

Mary Brittain	Nancy Fallen
Arnold Fleshood	Ada Hill
James O. Hodges	Jean Lokerson
Alice Pieper	Howard Sparks
Martin Tarter	Rizpah Welch
Esther Zaret	

Clinical Faculty

Stacy Berry	Marshall Brannon
Clarice Christian	Marcia Edwards
Mary Fulghum	Barbara Goehle
Carol Hazam	Anthony Jackson
Rhonda Kregel	Patricia Lindstrom
Brenda Lucas	David Moore
Gregory Muzik	Calvin Parham
Sandra Parker	Susan Parsons
Gabe Pascarella	Alease Patterson
Jacob Pope	Frances Raine
Oneida Rozier	Patty Smagala
Patricia Taylor	Ellen Terrell
Jacqueline Thomas	Lonnie Turnage
Wendy Wadsworth	R. Dennis Waldrop
William Ware	

* Joint or secondary appointment

Division Mission

The Division of Teacher Education is committed to excelling in the initial and continuing preparation of teachers for the Commonwealth, with particular emphasis on early childhood through secondary education in diverse settings; to collaborating with colleagues in educational agencies; to applying research about learning in classrooms; to undertaking scholarly endeavors that examine learning and teaching processes; and to providing technical assistance to special populations and service to school divisions and agencies. The division values:

- providing the highest quality teaching and opportunities for learning;
- integrating academic disciplines, professional studies, and clinical experiences as program components for student learning;
- collaborating in the preparation of teachers and in the continuing development of faculty both within the University and in public and private educational settings;
- enabling teachers and intending teachers to work effectively with students from diverse populations and those with special needs;
- helping intending teachers become effective decision-makers and practicing teachers refine their decision-making skills in the roles for which they are preparing;

- effectively modeling the use of technology to enhance and foster learning;
- incorporating, among others, developmental, cognitive, and functional approaches and content areas in the preparation of personnel in early, middle, secondary, and special education programs;
- serving the University through faculty participation in institutional committees and task forces, programs, and supportive research and service institutes and centers within the University; and
- serving the community through technical assistance, workshops, consulting, continuing education activities, Professional Development Schools, and other partnerships.

Extended Teacher Preparation Programs

The School of Education, in cooperation with the College of Humanities and Sciences, offers extended teacher preparation programs in early education (nursery school/kindergarten through fourth grade¹); middle education (grades four-eight¹); secondary education (grades eight-12); and special education (kindergarten through grade 12). The successful completion of these programs results in the simultaneous awarding of both a bachelor's and a master's degree. The program requires 160² credits, at least 33 of which must be at the graduate-level.

Prospective secondary school teachers earn their bachelor's in a specific field in which they plan to teach – English, a foreign language, a science, mathematics, or history.

Similarly, prospective middle school teachers most often specialize in English, history, mathematics, a science, or social science. But for students planning to become early or special education teachers, any major in the humanities or the sciences is acceptable.

In the extended program, a student generally begins work on the professional studies component in his or her third year of study.

Information on specific requirements for all academic majors is available at the Division of Teacher Education, in the College of Humanities and Sciences' associate dean's office, or through the department of the chosen major. A student in the extended program must maintain a minimum cumulative GPA of 2.5 for admission to teacher preparation and clinical experience, and prior to the fifth year a minimum GPA of 2.8 for admission to the graduate study portion of the program.

Admission to the Extended Teacher Preparation Program

Any undergraduate admitted to VCU who declares a major in the College of the Humanities and Sciences is eligible to declare a specialization in early, middle, secondary or special education.

¹ These programs changed for freshmen admitted in 1996 and thereafter to NK-5 and 6-8 respectively.

² 156 credits for those in 120 credit BA or BS program in the College of Humanities and Sciences.

Transfer students and students currently attending VCU who wish to change their majors to this program must have a minimum GPA of 2.0; however, note the much higher GPA requirement for admission to teacher preparation and then to graduate study. All students in the program, upon completion of 60 hours of undergraduate course work and prior to completion of 90 hours, must apply for admission to teacher education. To be accepted, a student must have a minimum GPA of 2.5. Admission to graduate study requires a GPA of 2.8.

General Requirements and Procedures

Students who pursue one of the extended teacher preparation programs follow a series of steps as noted in order to meet all requirements, including the 160 credits.

Step 1: Admission to the University

Requirements

- a.) Scores from Scholastic Aptitude Test (SAT) or American College Test (ACT).
- b.) Minimum 2.0 GPA from high school or previous college.

Procedures

- a.) Declare an undergraduate major in Humanities and Sciences.
- b.) Declare an education graduate major in early childhood, middle, secondary, or special education.

Step 2: Admission to Teacher Preparation

Complete before enrolling in 1st practicum (Upon completion of 60 credits of liberal arts and prior to completion of 90 credits.)

Requirements

- a.) 2.5 GPA or better.
- b.) Completion of six hours of English, three hours of math, four hours of laboratory science, and six hours of social science and/or history.
- c.) Completion of Praxis I.
- d.) Confirmation of education major. Undecided majors must decide.

Procedures

- a.) Complete Admission to Teacher Preparation Application Form (obtain in Academic Services) and submit a current transcript.
- b.) Complete EDU 300; submit required Praxis scores.
- c.) Register in dean's office for interview upon returning Admission for Teacher Preparation Application form. Complete required interview with education program faculty. Special education requires interview with program faculty.

Note: Students must be admitted to Teacher Preparation to be eligible for practicum placement. Applications for practicum are available at the Office of Academic Services.

Register for, take, and submit required Praxis I scores.

Step 3: Application to Graduate Studies

Requirements

- a.) 2.8 GPA or better. Students with GPAs of 2.6-2.75 may be considered for provisional admission.
- b.) Acceptable scores on the Graduate Record Examination (GRE) or Miller Analogy Test (MAT).
- c.) Personal Statement addressing reasons for seeking graduate education, including career goals; experience working with age group to be taught; reasons for entering teaching; and success in organizing, planning, and implementing work with other individuals.
- d.) Three references. It is suggested that these be instructors or advisers in the College of Humanities and Sciences and the School of Education. Use Graduate Studies Reference Forms.

Procedures

- a.) Obtain Graduate School Admissions packet from the Office of Academic Services in Room 2087, Oliver Hall.
- b.) Return completed application packet, along with up-to-date transcripts, to VCU Office of Graduate Studies.

Note: Students must be admitted to Graduate Studies to be eligible to enroll in graduate-level courses. Note School of Graduate Studies requirement that no more than six graduate credits taken prior to admission to graduate study may be accepted toward the degree.

Step 4: Internship

All programs require during the fifth year a graduate-level internship (EDU 672). Applications for internship can be obtained in the Office of Academic Services in Room 2087, Oliver Hall. Individuals choosing special education are placed in two different settings, one for emotional disturbance and one for mental retardation, each in a different semester. Individuals in early education are placed in a kindergarten and a grade 1-4 in the same semester. Individuals in middle and secondary education typically have a single placement, although perhaps with two different teachers.

Requirements

- a.) 3.0 GPA or better on graduate courses.
- b.) Admission to Teacher Preparation and to Graduate Study.
- c.) Completed application and transcripts submitted by established deadlines.

¹ Students in the 120 credit BA or BS programs in the College of Humanities and Sciences complete a 156 credit program.

² 156 credits for those in 120 credit BA or BS programs in the College of Humanities and Sciences.

Procedures

- a.) Obtain application form from the Office of Academic Services.
- b.) Submit copies of transcripts and required statement to a professional studies adviser for review.
- c.) Obtain approval signature of professional studies adviser.
- d.) Submit completed application to Office of Academic Services by October 1 for the following spring semester; by March 1 for the following fall semester.

Step 5: Admission to the Profession

(During the final semester of enrollment.)

Requirements

- a.) Completion of all degree requirements.
- b.) Acceptable scores on Praxis I and Praxis II Specialty Test.
- c.) Completion of application for initial teacher licensure (obtain from Office of Academic Services).

Procedures

- a.) Complete applications for undergraduate degree in humanities and sciences with academic major adviser, and graduate degree in education with professional studies adviser.
- b.) Submit application for initial teacher licensure with University supervisor or professional studies adviser signature.

Faculty Advisement

An academic adviser is assigned to a student by the department of that student's chosen major in the College of Humanities and Sciences. A professional studies adviser is similarly assigned by the Division of Teacher Education according to the student's proposed teaching endorsement. This adviser-student relationship continues throughout the course of study at VCU. Student and adviser jointly develop the student's individual program. During the planning process, the student identifies, clarifies, and explores his or her personal and professional goals.

Clinical Experiences

Programs in elementary, middle, secondary, and special education encompass planned experiences in the field or clinical settings, including guided practica experiences. These direct experiences lead to an internship.

With the guidance of a mentor, the intern assumes more independence in the field setting. Satisfactory completion of the internship and the preceding training is charted through evaluations made by the University supervisor, colleague-teacher, and school administrator.

Professional Development Schools

A Professional Development School (PDS) is one where substantial numbers of the faculty are: interested in working with future teachers, participating regularly in staff development, willing to research the answers to

questions that concern them about teaching, learning, and students. A VCU Faculty Liaison is in the school on a weekly basis working with teachers, students, and administrators, and significant numbers of VCU students are placed there for various clinical experiences. PDSs in 1997-98 included:

Elementary

- Beaverdam Elementary (Hanover County)
- Glen Lea Elementary (Henrico County)
- Mary Munford Elementary (Richmond City)
- Whitcomb Model Elementary (Richmond City)

Middle

- Manchester Middle (Chesterfield County)
- Mount Vernon Middle (Henrico County)

High

- Governor's School for Government and International Studies (a regional high school located in Richmond and serving more than a dozen school divisions)

Teacher as Decision Maker

The guiding theme of the program is "teacher as decision maker." Virtually all courses and experiences in the program either implicitly or explicitly prepare the prospective teacher with appropriate knowledge on which instructional decisions can be made.

Courses in specific areas, such as the teaching of mathematics, science, social studies, and English address the processes and skills which permit teachers to transmit the content in meaningful and effective ways.

Courses in process areas such as reading give teachers the competencies required to assist children in developing skills which undergird instruction in all other areas.

General curriculum courses help teachers to understand the relationship of philosophies and theories of learning to the developmental growth of students. These courses help teachers to integrate their understanding of students' physical, emotional, social and mental growth with their knowledge of the content of the discipline. Strategies for instructional planning and classroom management are essential components.

Dissimilarities

The demographics of elementary, middle, and high school students are changing: increasing numbers of students for whom English is not the first language, of minority students, of students who do not all learn or respond in similar ways, and of students who may be identified as possessing a disability.

Future teachers are encouraged to take advantage of opportunities through formal courses and other experiences to gain greater insight and ability addressing learners from differing cultural backgrounds, and considering the needs of learners with different learning styles, participation styles, and special abilities or disabilities.

Scholarships and Awards

In addition to other awards, students in the Division of Teacher Education are eligible for the following scholarships.

- The Virginia Arnold Scholarship (early and middle)
- The Pearl Burford Scholarship (elementary)
- The N. Thelma Jones Scholarship (secondary)
- The Ann Elizabeth Marston Scholarship (elementary and secondary)
- The Virginia and Berta M. Newell Endowed Scholarship (early and middle)
- The Teacher Education Scholarship (funded by Division faculty; early, middle, secondary and special education students are eligible)

Honors Study

Students who qualify can participate in the University Honors Program, and are eligible to take "Honors" course sections and special seminars.

Honors sections of the Foundations of Education and Human Development and Learning courses are offered to qualified students, providing them with opportunities for critical investigation in areas of special professional interest.

Program Changes

The School of Education in consultation with the College of Humanities and Sciences is changing programs to reflect more accurately the current configuration of elementary and middle schools, and the developmental stages of the students.

The programs in early education and middle education are being changed respectively from nursery/kindergarten through grade 4 (NK-4) to nursery/kindergarten through grade 5 (NK-5) emphasis, and grades 4 through 8 (4-8) to grades 6 through 8 (6-8) emphasis. These changes affect students admitted to the Extended Program as freshmen for Fall 1996; for transfer, change of major, and degree holders, the changes will be phased in.

VCU students previously admitted in early and middle education should check with their professional studies advisers for how such changes may affect them, the courses they take, the sequence in which they take them, and the connection of clinical practica to specific program courses and expectations.

Appropriate revised program planning sheets will be available in the Division of Teacher Education Office.

Early Childhood/Elementary Education Program¹

This program focuses on the preparation of the teacher planning to work with children from infancy through age ten, covering nursery school and kindergarten through fifth grade.

After completing this program, the student is eligible for licensure in teaching preschool and elementary grades.

Liberal Arts and Sciences Requirements

Individuals choosing the Early Childhood/Elementary Education specialization may select almost any major offered by the College of Humanities and Sciences. A

major in one of the content areas typically taught (mathematics, a science, English, history, or perhaps a social science) is particularly appropriate, but majors in other liberal arts areas are acceptable.

The program seeks, among other goals, to prepare teachers to be more comfortable with and better able to teach mathematics and science effectively in kindergarten through 5th grade. Within or in addition to the General Education and Academic Major requirements in the College of Humanities and Sciences, candidates in the Early Childhood/Elementary Education (NK-5) specialization are expected to meet these liberal studies:

Mathematics and Statistical Reasoning. The General Education requirement is three to six credits; the Early Childhood/Elementary program requirement is six credits. At present these two courses are recommended; other courses are to be developed which may also be suitable:

MAT 131	Introduction to Contemporary Mathematics
STA 208	Statistical Thinking

Natural Sciences. The General Education requirement is seven to nine credits, with one course each from the physical sciences and the biological sciences, with at least one laboratory; the program requirement is 12 credits, again with at least one course each in the physical sciences and the biological sciences, and two laboratories. Choosing among these courses is recommended:

	<i>Credits</i>
Biological Sciences	
BIO 102,L102 Science of Heredity and Laboratory	5
BIO 103,L103 Environmental Science and Laboratory	5
Physical Sciences	
CHE 110,L110 Chemistry and Society and Laboratory	3
CHE 395 Topics: Chemistry in the News	3
PHY 101,L101 Foundations of Physics and Laboratory	4
PHY 107,L107 Wonders of Technology and Laboratory	4
PHY 291 Topics: Experiencing Science	3

The program further requires three credits of interdisciplinary mathematics and science, such as PHY 291 Topics: Experiencing Science.

Visual and Performing Arts. Three credits in art or music to be designated with the professional studies adviser.

Early/Elementary Education, NK-5

This program is currently being phased in and cannot be completed before Fall 2000. Consult with the appropriate professional studies adviser: in addition to changes in professional studies, there are also changes in liberal arts requirements.

Professional Studies Requirements (60 credits)

Undergraduate	<i>Credits</i>
EDU 300 Foundations of Education	3
PSY 301 Child Psychology	3
EDU/PSY 305 Educational Psychology	3

¹ See preceding section "Program Changes"

EDU 310	Practicum I (with EDU 414 and EDU 426)	2
EDU 310	Practicum II (with EDU 589 and EDU 517 or 522 or 591) *	2
EDU 351	Children's Literature	3
PHE 390	Physical Education for Elementary Teachers	3
EDU 414	Curriculum and Methods for Young Children	4
EDU 426	Teaching Reading and Other Language Arts	3

26

Graduate

EDU 517	Science Education in the Elementary School	3
EDU 522	Teaching Mathematics for Elementary Education	3
EDU 566	Diagnosis and Remediation in Reading	3
EDU 589	Integrating the Elementary Curriculum †	1
EDU 591	Social Studies Education in the Elementary School	3
EDU 605	Theory and Practice of Educating Individuals with Special Needs	3
EDU 607	Advanced Educational Psychology	3
EDU 626	Home-School Communication and Collaboration	3
EDU 672	Internship I + II (K and grades 1-5 placements)	9
EDU 673	Seminar on Educational Issues, Ethics, and Policy	3

34

* EDU 310 Practicum II must be taken concurrently with one of EDU 517, 522, or 591; the others must have been completed; EDU 566 must also have been completed or taken concurrently with EDU 310.

† EDU 589 must be taken concurrently with EDU 310 Practicum II.

Middle Education Program¹

The Middle Education Program prepares the prospective teacher to instruct children between the ages of 11 and 14, grades six through eight. A graduate of this program can be licensed to teach in elementary and middle school grades.

Liberal Arts and Sciences Requirements

In addition to satisfying the General Education Requirements of the College of Humanities and Sciences, candidates selecting Middle Education as the specialization must:

1. Choose a major in one of the subjects taught in middle schools (mathematics, one of the sciences, English, history, or a social science such as political science). Other liberal arts majors may be chosen, but an individual with such a major will likely not be as "marketable".
2. Choose an additional concentration of 18 semester credits in another of the content areas in 1. (Most middle schools organize into teams, with a teacher typically responsible for two subjects.)
3. Individuals planning to major in English, history, or a social science may wish to consider credits in mathematics and science from courses, both for the General Education requirement and their own edification, such as these:

	<i>Credits</i>	
MAT 131	Introduction to Contemporary Mathematics	3
STA 208	Statistical Thinking	3
BIO 102,L102	Science of Heredity and Laboratory	5

BIO 103,L103	Environmental Science and Laboratory	5
CHE 110,L110	Chemistry in Context and Laboratory	4
CHE 395	Topics: Chemistry in the News	3
PHY 101, L101	Foundations of Physics and Laboratory	4
PHY 107,L107	Wonders of Technology and Laboratory	4
PHY 291	Topics: Experiencing Science	3

Middle Education, 6-8

This program is currently being phased in and cannot be completed before Fall 2000. Consult with the appropriate professional studies adviser, for in addition to changes in the professional studies, there are changes in liberal arts requirements.

Professional Studies Requirements (45 credits)

	<i>Credits</i>	
Undergraduate		
EDU 300	Foundations of Education	3
EDU 301	Human Development and Learning	3
EDU 310	Practicum A (concurrent with EDU 544)	1
EDU 310	Practicum B (concurrent with EDU 521 or 540)	1
EDU 310	Practicum C (concurrent with one of: EDU 550 or the course not taken with B)	1
EDU 407	Educational Media:Utilization	3
	12	

Graduate

Choose two of the courses from:	6
EDU 521	Teaching Mathematics for Middle Education (3)
EDU 540	Teaching Middle and High School Science (3)
EDU 550	Teaching Language Arts and Social Studies in the Middle School (3)

Complete each of these courses:

EDU 544	Introduction to the Middle School	3
EDU 562	Reading Instruction in the Content Areas	3
EDU 607	Advanced Educational Psychology	3
EDU 672	Internship I + II	9
EDU 673	Seminar on Educational Issues, Ethics, and Policy	3
EDU 681	Investigations and Trends in Teaching*	3

Graduate selective chosen from:

CSC 554	Applications of Technology in the Teaching of Mathematics	3
EDU 556	Computer Applications in Education	
EDU 600	Organizing for Effective Instruction	
EDU 605	Theory and Practice in Educating Individuals with Special Needs	
EDU 626	Home-School Communication and Collaboration	
EDU 660	Methods of Research	
ENE 601	Young Adult Literature	

33

* Pertinent subject section (e.g., English, mathematics, science, or social studies)

Secondary Education Program

These programs prepare the student for a career as a secondary school teacher – grades eight through twelve. Teaching endorsements are available in drama, English, French, German, Spanish, history, history and social studies, mathematics, biology, physics, chemistry, and

¹ See preceding section "Program Changes"

general science. Added endorsements are available in English as a second language and earth science.

Liberal Arts and Sciences Requirements

In addition to satisfying the General Education Requirements of the College of Humanities and Sciences, candidates selecting Secondary Education as the specialization must choose a major in one of these subjects taught in high schools (biology, chemistry, English, French, German, history, mathematics, physics, political science or Spanish). Individuals wishing to teach economics, geography, psychology, or sociology would use history as the major and take the appropriate social sciences courses to add the social studies endorsement.

Professional Studies Requirements (42 credits)

Undergraduate	<i>Credits</i>
EDU 300 Foundations of Education	3
EDU 301 Human Development and Learning	3
EDU 310 Practicum A (concurrent with EDU 537)	2
EDU 310 Practicum B (concurrent with EDU 540, 543,545,547,OR 548)	1
	9
Graduate	
EDU 537 Secondary School Curriculum	3
One of:	3
EDU 540 Teaching Middle and High School Science	
EDU 543 Teaching Secondary School Foreign Language	
EDU 545 Teaching Secondary School Mathematics	
EDU 547 Teaching Secondary School Social Studies	
EDU 548 Teaching Secondary School English	
EDU 607 Advanced Educational Psychology	3
EDU 672 Internship I and II †	9
EDU 673 Seminar on Educational Issues, Ethics, and Policy	3
EDU 681 Investigations and Trends in Teaching:* English; Foreign Language;Mathematics; Science; Social Science	3
Graduate selective ^Δ	9
	33

* Select section matching content area to be taught

† A minimum of 21 credits, including EDU 300,301,310,537,one of (EDU 540,543, 545, 547,OR 548), EDU 607 OR 673 and the required selective (see 1 below),must be completed prior to the internship.

^Δ Graduate selectives are to be chosen from:

1. 3 credits from:
 - Technology:
 - EDU 556 Computer Applications in Education
 - CSC 554 Applications of Technology in the Teaching of Mathematics (required in mathematics)
 - Reading:
 - EDU 562 Reading Instruction in the Content Areas
 - Classroom Management:
 - EDU 600 Organizing for Effective Instruction
 - EDU 631 Behavior Management of Students with Disabilities
 - Special Education:
 - EDU 605 Theory and Practice in Educating Individuals with Special Needs
 - LDS 600 Characteristics of Persons with Learning Disabilities
2. 6 credits from other courses in 1 above, from the academic major, or from courses such as these:
 - EDU 521 Teaching Mathematics for Middle Education (required in math)

EDU 626 Home-School Communication and Collaboration
 EDU 660 Methods of Research
 ENE 601 Young Adult Literature

All selectives should be chosen in consultation with the professional studies adviser.

Special Education Program

This two-pronged program instructs the prospective teacher in the special skills needed to teach emotionally disturbed and mentally retarded children and adolescents. A student in this program receives dual endorsement.

Emotional Disturbance

This phase prepares the student to teach emotionally disturbed people in school and residential settings. The student learns to apply a variety of interventions because of the integration of didactic course work and clinical experience. The program emphasizes the development of a broad range of teaching competencies derived from theoretical models to promote social, behavioral and academic growth in behavior disordered and emotionally disturbed pupils.

Mental Retardation

This phase prepares the student to teach mentally retarded people in public, private, and community settings. The program stresses assessment, curriculum, service delivery, and adaptational techniques for general educators.

Liberal Arts and Sciences Requirements

In addition to satisfying the General Education Requirements of the College of Humanities and Sciences, candidates selecting Special Education as the specialization may choose almost any Humanities and Sciences major offered. One in the social sciences, such as psychology or sociology, may be especially useful, but so are ones in English, a science, mathematics, history, or similar major.

Professional Studies Requirements

Special Education, K-12

	<i>Credits</i>
EDU 300 Foundations of Education	3
EDU 301 Human Development and Learning OR PSY 305 Educational Psychology	3
EDU 310 Practicum:Emotional Disturbance	2
EDU 310 Practicum:Mental Retardation	2
EDU 330 Survey of Special Education	3
EDU 331 Human Interaction in Teaching	3
EDU 422 Teaching Elementary School Mathematics, OR EDU 423 Teaching Mathematics for Middle Education	3
EDU 426 Teaching Reading and Other Language Arts	3
EDU 468 Educational Diagnosis of Exceptional Individuals	3
EMO 500 Characteristics of Students with Emotional Disturbances	3
EMO 501 Teaching Students with Emotional Disturbance	3
MRT 556 Introduction to Mental Retardation	3

MRT 560	Methods for Students with Mental Retardation	3
MRT 500	Language Intervention for Children and Learners with Severe Disabilities OR LDS 530 Language Disabilities:Assessment and Teaching	3
EDU 631	Behavior Management of the Exceptional Student	3
EDU 632	Secondary Programming for Exceptional Students	3
EDU 672	Internship:Emotional Disturbance	6
EDU 672	Internship:Mental Retardation	6
EDU 6XX	Foundations Course (choose with adviser)	6
Elective		3

Minor in Foundations of Special Education

The minor provides an opportunity to explore the field of special education and disabilities, for focused investigation of human behavior within the context of educational institutions or explorations related to possible or real career needs. Completion of this minor does not result in licensure or endorsement for teaching in the Commonwealth of Virginia.

The minor requires a minimum of 21 semester hours. If one or more of these courses is taken to satisfy a general studies requirement or a major requirement, it may also be counted toward the minor.

		Credits
EDU 300	Foundations of Education	3
EDU 301	Human Development and Learning OR EDU/PSY 305 Educational Psychology	3
EDU 330	Survey of Special Education	3
Selectives (select any 4):		12
EDU 331	Human Interaction in Teaching (3)	
EDU 573	Introduction to Learning Disabilities (3)	
EMO 500	Characteristics of Students with Emotional Disturbances (3)	
MRT 556	Introduction to Mental Retardation (3)	
PHE 495	Adaptive Physical Education (3)	

Master of Education Programs

The Division offers Master of Education programs designed to provide advanced educational preparation for practitioners. These programs are:

Special Education

Early Childhood Special Education (birth to age 5)
Emotional Disturbance
Learning Disabilities
Mental Retardation
Severe Disabilities

Curriculum and Instruction

Early, Middle, or Secondary Education
Instructional Technology
Library/Media

Reading

These programs typically require 36-42 credits. See the *Graduate Bulletin* for a more detailed description of each program.

Post-Baccalaureate Certificate Program

The post-baccalaureate certificate in teaching program is designed for the student holding a bachelor's degree in a field other than education who wishes to teach in one or more grades, kindergarten through twelve, who wishes to teach in a shortage area, and for whom a master's degree is not a priority. Shortage areas are typically in sciences and mathematics rather than humanities or social sciences. Candidates for this program must hold a liberal arts degree or its equivalent. Those candidates planning to teach at the secondary-level must have a major or its equivalent in the subject they wish to teach. Candidates should also have an advanced degree.

Candidates are required to complete a minimum of 24 designated hours beyond the bachelor's level. The minimum number of hours, including those at the undergraduate-level, varies by certificate track. For instance, 30 hours are required for the secondary education track, whereas 38 hours are required for a student in the middle education track. (See the *Graduate Bulletin* for a more detailed description).

Division of Educational Studies

John T. Seyfarth

Professor and Division Head (1974) BS University of Chattanooga; MS and EdD 1969 University Tennessee

- Beale, Andrew V. (1969) *Professor* AB and MS University of North Carolina; EdD 1969 University of Virginia
- Cauley, Kathleen M. (1985) *Associate Professor* BA 1977 Pennsylvania State University; PhD 1985 University of Delaware
- Craver, Samuel M. (1971) *Professor* BA 1963, MAT 1964 and PhD 1971 University of North Carolina
- Dilworth, Robert L. (1963) *Assistant Professor* BS University of Florida; MS United States Army Command and General Staff College; MPA 1975 University of Oklahoma; MEd 1992 and EdD 1993 Columbia University
- Gerber, Paul J. (1988) *Professor of Special Education* BA 1972 Adelphi University; MA 1975 and PhD 1978 University of Michigan
- Hephner, Thomas A. (1976) *Associate Professor and Director, Continuing Education and Field Services* BA 1958 Kent State University; BS 1963, MS 1968 and PhD 1972 Ohio State University
- Lambie, Rosemary Anne (1978) *Professor* AB 1968 Loyola University; MA 1971 University of North Colorado; EdD 1978 University of Kansas Medical Center
- Leone, Susan D. (1986) *Assistant Professor* BA 1966 University of Northern Iowa; MEd 1974 Virginia Commonwealth University; EdD 1994 University of Virginia
- Linder, Fredric (1973) *Assistant Professor* AB University of Miami; MA New School of Social Research, New York; PhD 1971 State University of New York, Buffalo
- Londoner, Carroll A. (1972) *Professor of Adult Education* BA University of California, Los Angeles; BD San Francisco Theological Seminary; MA 1968 and PhD 1970 Indiana University
- Magill, Cheryl C. (1993) *Instructor* BA 1973 Longwood College; MEd 1981 Virginia Commonwealth University
- McMillan, James H. (1979) *Professor* BA Albion College; MA Michigan State University; PhD 1976 Northwestern University
- Philipsen, Maike I. (1993) *Assistant Professor* BA 1984 Rhinische Frederick-Wilhelms University; MA 1989 Free University of Berlin; PhD 1993 University of North Carolina, Chapel Hill
- Schumacher, Sally A. (1974) *Associate Professor* BA Duke University; MEd University of North Carolina; MA Northwestern University; PhD 1975 Washington University
- Strandberg, Warren D. (1972) *Professor* BA University of Minnesota; MA and PhD 1967 Northwestern University
- Vacca, Richard S. (1967) *Professor* BA 1959 Lafayette College; MS 1965 State University of New York, Oneonta; EdD 1967 Duke University

Wergin, Jon F. (1973) *Professor* BA, MA and PhD 1973 University of Nebraska

Emeriti Faculty

James Bailey
Jack Duncan
Gordon Keesee
Howard Ozmon
Ronald Sherron

William Bost
Vivien Ely
John Mapp
Charles Sharman
Gaynelle Whitlock

The Division of Educational Studies offers the student undergraduate courses in foundational studies necessary for specialized work in education degree programs. All degree-seeking undergraduate students in education are required to take EDU 300 Foundations of Education and EDU 301 Human Development and Learning. Other foundations requirements are listed under each specific program of study.

Course Descriptions

Courses in Adult Education

ADE 402 How Adults Learn. Semester course; 3 lecture hours. 3 credits. Overview of the adult as a learner. Topics include how and what adults learn, why adults participate in learning, and major barriers to learning for adults. Implications for teachers/trainers of adults are explored.

Courses in Education

EDU 200 Education in American Society. Semester course; 3 lecture hours. 3 credits. An elective course for non-education majors, including those who may be exploring careers in education. An examination of the complex nature of our American educational system and various societal influences on that system. The course will include an exploration of some critical issues affecting the future of American education, on-site visits to educational institutions, and other field experiences in settings that will permit exploration of career options.

EDU 203 Focus on Choice. Semester course; 3 lecture hours. 3 credits. A career planning experience for adults focusing on discontinuity in life patterns and a review of current educational and occupational opportunities. Consideration of the world of work, fields of education and volunteer service, and the development of one's own potential will be featured.

EDU 300 Foundations of Education. Semester course; 3 lecture hours. 3 credits. The historical, sociological, and philosophical backgrounds of educational theories and practices. The aim of the course is to help the student develop a basic understanding of education in the modern world.

EDU 301 Human Development and Learning. Semester course; 3 lecture hours. 3 credits. A study of human development through the life span with special emphasis on child and adolescent psychology, the nature of learning, and basic concepts of learning theories.

EDU 305/PSY 305 Educational Psychology. Semester course; 3 lecture hours. 3 credits. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development.

EDU 307/ENG 307 Teaching Writing Skills. Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation, and topic construction. Includes extensive journal and essay writing. May not be used to satisfy the literature requirements of the College of Humanities and Sciences.

EDU 310 Practicum. 1-3 credits. May be repeated for a maximum of six credits. A field placement that precedes student teaching, the non-school supervised experience, or the internship. Includes planned observations, tutorials, and small group involvement.

EDU 330 Survey of Special Education. Semester course; 3 lecture hours. 3 credits. Pre or corequisite for all other undergraduate special education courses. For majors and nonmajors. An overview of the field of special education. Includes current trends, legal issues, definitions, etiology, identification, characteristics, and appropriate services for children and adults with a range of exceptionalities.

EDU 331 Human Interaction in Teaching. Semester course; 3 lecture hours. 3 credits. Develop skills teachers use in interactions with students, family members, and other helping professionals, for relationship building, communication, affective education, teamwork, and consultation.

EDU 351/ENG 351 Children's Literature I. Semester course; 3 lecture hours. 3 credits. Designed to give students an appreciation of values of children's literature; includes biography, fable, myth, traditional and modern fanciful tales, and poetry, as well as a survey of the history of children's literature.

EDU 400 Independent Study. Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

EDU 401 Pupil Evaluation. Semester course; 3 lecture hours. 3 credits. Principles and procedures of evaluation of pupil growth in cognitive, affective, and psychomotor domains for a prospective classroom teacher; construction and analysis of teacher-made tests and other formal and informal assessment procedures; interpretation and use of criterion-referenced and norm-referenced standardized tests in measuring group and individual achievement.

EDU 407 Educational Media: Utilization. Semester course; 3 lecture hours. 3 credits. The study and use of audio-visual equipment and aids, and means for using them for more effective presentations to groups.

EDU 414 Curriculum and Methods for Young Children. Semester course; 4 lecture hours. 4 credits. Prerequisite: Admission to Teacher Preparation. Corequisite: EDU 310. A study of developmentally appropriate curriculum and methods for young children, including diversity, behavior guidance and management, planning, learning environments, curriculum, and assessment of the whole child. Includes an overview of the history of Early Childhood Education and issues currently facing the profession.

EDU 426 Teaching Reading and Other Language Arts. Semester course; 3 lecture hours. 3 credits. Presents teaching strategies and materials in reading and the other language arts based on current theory and research. Emphasizes the interrelatedness of listening, speaking, reading and writing and the importance of naturalistic language experiences.

EDU 433/ENG 433 Literature for Adolescents. Semester course; 3 lecture hours. 3 credits. Designed to acquaint the prospective secondary school English teacher with the nature, scope, and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents.

EDU 461 Teaching the Mentally Retarded. Semester course; 3 lecture hours. 3 credits. Prerequisites: EDU 451 and 456 or permission of instructor. Curriculum development and organization of activities for the mentally retarded at different maturational levels with specific attention to program content, equipment, materials, and resources. Taken concurrently with EDU 310.

EDU 468 Educational Diagnosis of Exceptional Individuals. Semester course; 3 lecture hours. 3 credits. Study and simulation of basic assessment techniques and their use in determining the nature and extent of learning problems in educational placement decisions and in individual program development and implementation.

EDU 476 Methods for Residence Hall Assistants. Semester course; 3 lecture hours. 3 credits. Prerequisite: Serve in VCU residence halls or permission of instructor. Course designed primarily to present resident assistants and others with student development concepts, peer assistance and helping skills, and group techniques. Residence halls will be used as primary learning laboratories.

EDU 485 Directed Student Teaching I. 6 credits. Prerequisites: Admission to EDU 310 or equivalent with a grade of "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

EDU 486 Directed Student Teaching II. 6 credits. Prerequisites: Admission to EDU 310 or equivalent with a grade of "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

EDU 487 Supervised Nonschool Experiences I. 6 credits. Prerequisites: Completion of EDU 310 or equivalent with a grade of "C" or better, recommendation of practicum supervisor, and satisfaction of eligibility requirements for student teaching. A practical experience in a community agency or other approved nonschool setting that provides for the efficient application of knowledge, ideas, and skills related to one's occupational objective. Culminates in full responsibility for planning, implementing, and evaluating activities. Does not satisfy student teaching or certification requirements for student teaching.

EDU 488 Supervised Nonschool Experiences II. 6 credits. Prerequisites: Completion of EDU 310 or equivalent with a grade of "C" or better, recommendation of practicum supervisor and satisfaction of eligibility requirements for student teaching. A practical experience in a community agency or other approved nonschool setting that provides for the efficient application of knowledge, ideas, and skills related to one's occupational objective. Culminates in full responsibility for planning, implementing, and evaluating activities. Does not satisfy student teaching or certification requirements for student teaching.

EDU 494 Topical Seminar in Education. Semester course; variable; 1-3 credits. May be repeated for a maximum of six credits. A seminar intended for group study by personnel interested in examining topics, issues, or problems related to the teaching, learning, and development of students.

Courses in Health Education

HED 190/PHE 190 History and Philosophy of Physical Education. Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

HED 300 Introduction to Health. Semester course; 3 lecture hours. 3 credits. An introduction to the five dimensions of health emphasizing personal application and encouraging conscious decisions about a variety of behaviors that can make a difference in one's health status.

HED 310/PHE 310 Early Professional Experience. Semester course; 3 laboratory hours. 1 credit. Opportunities are provided for observation and experience with professionals in the health and physical education fields. Designed for the students entering the fields to explore specific areas on campus or in the community.

HED 325 Treatment of Athletic Injuries. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 205. Theory and techniques for the prevention, recognition, referral, and follow-up care of injuries in physical education and athletics.

HED L325 Taping Techniques Laboratory. Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: HED 325. Instruction and practice in the application of adhesive and elastic strapping (laboratory fee required).

HED 380 Principles of Accident Prevention. Semester course; 3 lecture hours. 3 credits. This course is designed to provide information on the magnitude of the accident problem in the nation. Special attention is given to concepts and theories of accident prevention, particularly as they relate to use of highways.

HED 382 Introduction to Driver Education. Semester course; 3 lecture hours. 3 credits. An introduction to the vehicle operator's task within the highway transportation system: driver task analysis. A current automobile operator's permit is required.

HED 386 School and Community Health Resources. Semester course; 3 lecture hours. 3 credits. Acquaints the student with current available school and community resources and educational materials for health information. Available services in a community health program will be surveyed.

HED 397/PHE 397 Methods in Health and Physical Education. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods, materials, techniques, and skills in teaching health and physical education are discussed. Major topics include teaching styles, instructional guides, student evaluation, teacher evaluation, and discipline, as well as their application in teaching setting.

HED 398/PHE 398 Curriculum in Health and Physical Education. Semester course; 3 lecture hours. 3 credits. Curriculum planning will include key aspects in the development of school health and physical education programs. Preparations and development strategies for course outlines, unit/lesson plans, and the writing of behavioral objectives are highlighted. Related subject areas, trends, and problems also are examined.

HED 400 Nutrition. Semester course; 3 lecture hours. 3 credits. Provides learning opportunities that enable the student to acquire a practical and useful knowledge based on the sound principles of applied human nutrition. Emphasis will be on nutritional needs through the cycles of life providing information that will enhance the student's own lifestyle and provide experience in interpreting nutritional information for the public.

HED 410 Issues in Sexuality. Semester course; 3 lecture hours. 3 credits. An overview of content, principles, and strategies relating to issues in human sexuality both in the community and school settings. Basic concepts of human sexuality as they develop in today's world are presented. Issues include sexual maturity, reproductive systems, conception, birth, abortion, and varieties of sexual behavior and sexual dysfunctions and disorders.

HED 420 Substance Abuse. Semester course; 3 lecture hours. 3 credits. A survey of drugs that are used and abused in contemporary society. Multidisciplinary lectures and discussions include the historical and sociological perspectives of drugs in the school and community; the psychological and physiological effects of drug use; and the role of local and regional resources. Designed for students, teachers, counselors, administrators, and other interested persons. Rehabilitation methods and prevention programs also will be discussed.

HED 425 Advanced Treatment of Athletic Injuries. Semester course; 3 lecture hours. 3 credits. The course is designed to give the student knowledge of and experience with physical examination, diagnostic testing, and identification of athletic injury, including orthopedic evaluation techniques of specific injuries. This includes an understanding of the anatomical and biomechanical basis of joint motion. The course will include lecture, slide presentation, and practical experience.

HED 426 Therapeutic Modalities and Rehabilitative Techniques. Semester course; 3 lecture hours. 3 credits. This course is designed to provide students with an understanding of the theory and practical application of physical and exercise modalities commonly used in athletic training. The student is also exposed to methods of rehabilitation for specific injuries, and methods of fabrication of protective

splints and pads. The course will include lecture, slide presentation, practical experience, and guest lecturers.

HED 430 Trends in Modern Diseases. Semester course; 3 lecture hours. 3 credits. Communicable disease, nutritional disease, prevention (immunizations), developmental abnormalities, congenital defects, the handicapped child, and adolescent medicine are included.

HED 480 Safety, First Aid and CPR. Semester course; 3 lecture hours. 3 credits. This course includes American Red Cross and/or American Heart Association certification in Multimedia Standard First Aid and Basic Life Support (cardiopulmonary resuscitation). In addition, basic principles of accident causation and prevention are presented.

HED 482 Methods in Driver Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: HED 382. This course is designed to provide driver education instructional principles and methodology.

HED 487 Coping and Adaptation. Semester course; 3 lecture hours. 3 credits. Focuses on common stress factors in life such as death, personal loss, life changes, divorce, and emotional problems, such as anger, loneliness, and frustration. Strategies for dealing with such stressors are discussed and applied to both personal and professional settings.

HED 493/PHE 493 Tests and Measurement in Health and Physical Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 111. Topics include selecting, administering, scoring, and evaluating tests in the areas of general motor performance, health screening, fitness, sports skills, and knowledge. Scientific test construction and basic statistical analysis.

HED 494/PHE 494 Topical Seminar in Health and Physical Education. Semester course; 1-3 credits, repeatable up to 6 credits. An in-depth study of a topic, issue, or problem in health and/or physical education. See the *Schedule of Classes* each semester for specific topics to be offered.

Courses in Physical Education

PHE 100 Experimental Physical Education. 1 credit.

PHE 101 Foundations of Physical Conditioning: Jogging, Yoga, Weight Training, Swimming, as specified. 1 credit.

PHE 102 Fitness and Weight Control. 1 credit.

PHE 103 Adapted Physical Education. 1 credit.

PHE 106 Fencing. 1 credit.

PHE 107 Badminton. 1 credit.

PHE 108 Gymnastics Survey. 1 credit.

PHE 109 Racquetball. 1 credit.

PHE 110 Handball. 1 credit.

PHE 112 Tennis. 1 credit.

PHE 113 Wrestling. 1 credit.

PHE 114 Bowling. 1 credit.

PHE 115 Rugby. 1 credit.

PHE 116 Archery. 1 credit.

PHE 117 Golf. 1 credit.

PHE 121 Self Defense: Karate or Judo. 1 credit.

PHE 125 Basketball. 1 credit.

PHE 126 Flag Football. 1 credit.

PHE 127 Field Hockey. 1 credit.

PHE 128 Soccer. 1 credit.

PHE 129 Lacrosse. 1 credit.

PHE 137 Volleyball. 1 credit.

PHE 138 Team Handball. 1 credit.

PHE 139 Track and Field. 1 credit.

PHE 150 Beginning Swimming. 1 credit.

PHE 151 Intermediate Swimming. 1 credit.

PHE 155 Scuba Diving. 1 credit.

PHE 156 Synchronized Swimming. 1 credit.

PHE 157 Springboard Diving. 1 credit.

PHE 158 Aquatic Sports and Games. 1 credit.

HED 190/PHE 190 History and Philosophy of Physical Education. Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

PHE 200 Strength Training. 1 credit.

PHE 201 Endurance and Flexibility Training. 1 credit.

PHE 202 Basketball. 1 credit.

PHE 204 Softball. 1 credit.

PHE 208 Volleyball. 1 credit.

PHE 210 Field Hockey. 1 credit.

PHE 212 Soccer. 1 credit.

PHE 214 Wrestling and Flag Football. 1 credit.

PHE 216 Tennis. 1 credit.

PHE 226 Recreational and Indoor Racquet Sports. 1 credit.

PHE 227 Archery, Badminton, and Bowling. 1 credit.

PHE 230 Gymnastics. 1 credit.

PHE 233 Track and Field. 1 credit.

PHE 234 Elementary Rhythmics. 1 credit.

PHE 235 Social Rhythmics. 1 credit.

PHE 236 Developmental Activities and Games. 1 credit.

PHE 250 Lifeguard Training. 1-2 credits.

PHE 251 Water Safety Instruction. 1-2 credits.

PHE 300 Coaching Seminar. Semester course; 1 lecture hour. 1 credit. A lecture/discussion course that identifies the practical administrative and organizational responsibilities coaches encounter. Realistic problem-solving is stressed.

HED 310/PHE 310 Early Professional Experience. Semester course; 3 laboratory hours. 1 credit. Opportunities are provided for observation and experience with professionals in the health and physi-

cal education fields. Designed for the students entering the fields to explore specific areas on campus or in the community.

PHE 330 Motor Behavior. Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to the major concepts of motor control and motor learning and the influencing conditions. It will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

PHE 340 Introduction to Sport Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 101 and BUS 421. Acquaints the student with management principles, techniques, and functions related to the business fundamentals of sport. Includes communications, personnel, finance, public relations, legal aspects, facilities and program development.

PHE 356 Organization and Administration of Aquatic Activities. 1 credit.

PHE 382 Survey of Kinesiology and Physiology of Exercise. Semester course; 3 lecture hours. 3 credits. Examines the basic concepts of human biomechanics and exercise physiology. Includes basic and applied kinesiology and metabolic, endocrinological, cardiovascular, and respiratory responses and adaptations to exercise. Emphasizes the integration of kinesiological and physiological principles.

PHE 390 Physical Education for the Elementary Teacher. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods and curriculum planning in physical education for the elementary school teacher and physical education specialist. Emphasis is placed on using activities and games to foster the growth and development of the child with a focus on the psychomotor and affective domains.

PHE 391 Elementary Physical Education for Majors. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PHE 390. Designed to enhance knowledge of elementary physical education through an analysis of the aims, goals, objectives, programs, and teaching methods. Construction of year-round curriculum and daily lesson plans. Emphasis also placed upon the acquisition of administrative and organizational knowledge dealing with facilities, equipment, teaching aids, testing, measurement, and safety.

PHE 392 Kinesiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 205 or permission of instructor. A study of the anatomical, physiological, and physical aspects of human motion with application to the analysis of physical activities.

HED 397/PHE 397 Methods in Health and Physical Education. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods, materials, techniques, and skills in teaching health and physical education are discussed. Major topics include teaching styles, instructional guides, student evaluation, teacher evaluation, and discipline, as well as their application in teaching setting.

HED 398/PHE 398 Curriculum in Health and Physical Education. Semester course; 3 lecture hours. 3 credits. Curriculum planning will include key aspects in the development of school health and physical education programs. Preparations and development strategies for course outlines, unit/lesson plans, and the writing of behavioral objectives are highlighted. Related subject areas, trends, and problems also are examined.

PHE 401 Clinical Assessment in Exercise Science. Semester course; 2 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHE 392 and PHE 492. Designed for students in the clinical exercise science and rehabilitative fields. Emphasis is placed on the physical and performance assessment of the spine, body extremities, musculoskeletal function, goniometry, and gait.

PHE 402 Clinical Interventions in Exercise Science. Semester course; 2 lecture and 1 laboratory hour. 3 credits. Prerequisite: PHE 401. Designed for students in the clinical exercise science and rehabili-

tative fields. Emphasis is placed on rehabilitative techniques as an integral part of comprehensive care and its application to restore persons with physical impairments to the optimal level of functional independence. Topics include neurological dysfunction, orthopedic, prosthetic, orthic, respiratory, cardiac and aquatic rehabilitation.

PHE 430 Sports Psychology. Semester course; 3 lecture hours. 3 credits. Prerequisite: PSY 101. Examines various psychological aspects of sports performance. Topics include optimal performance, leadership effectiveness, ethics, stress management, coaching strategies, and motivation. Practical experiences include goal-setting, relaxation training, and cognitive intervention strategies.

PHE 431 Seminar in Applied Fitness. Semester course; 3 lecture hours. 3 credits. Open only to senior physical education majors or with permission of instructor. An in-depth study of various fitness areas and settings compatible with student career interests and current job market trends. Emphasis is placed on the application of knowledge and fundamental fitness principles. Topics include preparing exercise, nutrition, and weight loss, as well as weight and muscle gain prescriptions. Also includes training the elite athlete and designing fitness programs in the school and community.

PHE 432 Movement Education. Semester course; 3 lecture hours. 3 credits. For teachers of early childhood elementary and physical education. Emphasis is given to the role of movement and theory in the educational program and its implications for curriculum development and learning. Major consideration is given to the development of movement competency and self-awareness through creativity and exploration.

PHE 433 Psychosocial Aspects of Sport and Physical Activity. Semester course; 3 lecture hours. 3 credits. The focus of this course is the scientific study of the behavior of individuals and groups within sport and physical activity in terms of the psychological effects and factors of sport participation, and in terms of the social relationships and social settings within which sport participation occurs.

PHE 439 The Organization, Administration, and Supervision of the Intramural Sports Program. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Experiences in the organization and administration of an intramural sports program. Lecture will be devoted to the theory, philosophy, history, and plans for the conduct of an intramural sports program. Laboratory experience will be obtained by working in intramural programs.

PHE 440 Administration of Sport Facilities. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHE 340 Examines the planning, construction, programming, staffing, and use of sport facilities through classroom and field experiences. Studied from the standpoint of the development process. Covers planning processes, and the maintenance of outdoor and indoor athletic, physical education, fitness and sport facilities.

PHE 441 Law and Sport. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHE 340. Presents the legal aspects of sport/activity service systems. Emphasizes regulations in amateur athletics, liability for injury in sport activities, antitrust laws, facility accommodation for persons with special needs, and strategies to prevent legal action.

PHE 492 Physiology of Exercise. Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisite: BIO 206. Physiological changes in the human organism resulting from exercise, investigation of recent research in diet, drugs, fatigue, cardiovascular/respiratory fitness, conditioning programs for various age groups, and the effects of exercise upon various components of physical fitness and health. Application of specific problems to physical education programs. Laboratory experience in the use of research instruments.

HED 493/PHE 493 Tests and Measurement in Health and Physical Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 111. Topics include selecting, administering, scoring, and evaluating tests in the areas of general motor performance, health screening, fitness, sports skills, and knowledge. Scientific test construction and basic statistical analysis.

HED 494/PHE 494 Topical Seminar in Health and Physical Education. Semester course; 1-3 credits, repeatable up to 6 credits. An in-depth study of a topic, issue, or problem in health and/or physical education. See the Schedule of Classes each semester for specific topics to be offered.

PHE 495 Adaptive Physical Education. Semester course; 3 lecture hours. 3 credits. Provides an overview of those disabilities found most frequently in public schools. Emphasis is placed on developing understanding of various disabilities and skills in adapting activities to meet the needs and abilities of disabled students.

Courses in Recreation

REC 195 Recreation Leadership. Semester course; 3 lecture hours. 3 credits. Course provides a study of the theories of leadership, group dynamics, and human relationships used in recreation delivery systems. Students acquire and demonstrate practical skills in planning, organizing, leading, participating, and evaluating a wide variety of recreation activities selected from the basic areas of programming such as social recreation, music, dance, drama, arts and crafts, environmental-outdoor recreation, special events, sports and games, linguistics, and hobby clubs.

REC 200 Introduction to Outdoor Recreation Activities. Semester course; 3 lecture hours. 3 credits. A basic introduction to the theory and practice of outdoor adventure recreation. Emphasis is given to knowledge and understanding of the theoretical and philosophical foundations of participation in outdoor adventure recreation programs. Students will be exposed to an experiential approach to learning. Through involvement with activities, students will develop skills in planning, administering, and evaluating outdoor adventure recreation programs.

REC L201 Backpacking. Semester course; 2 laboratory hours. 1 credit. Prerequisite: REC 200 or permission of instructor. An introduction to backpacking. Utilizing lectures, readings, and hands-on experience, emphasis will be given to the skills and knowledge necessary for safe, low-impact, short-to-moderate-duration travel through back country areas.

REC L202 Flatwater Canoeing. Semester course; 28 laboratory hours. 1 credit. Prerequisites: REC 200 and ability to swim, or permission of instructor. Introduction to flatwater canoeing. Utilizing lectures, readings, and on-the-water experience, emphasis will be given to the skills and knowledge necessary for planning and implementing flatwater canoe trips. Topics include safety, locations for trips, equipment, and portaging, as well as the issues of conservation and impact.

REC L203 Whitewater Canoeing. Semester course; 2 laboratory hours. 1 credit. Prerequisites: REC L202 and ability to swim or permission of instructor. A basic introduction to whitewater paddling utilizing lectures, readings, and on-the-water experience. Emphasis will be given to the skills and knowledge necessary for planning and implementing whitewater canoe trips, including communication and the structure for leading group trips. Course is taught evenings and weekends as found in the *Schedule of Classes*.

REC L204 Rock Climbing. Semester course; 2 laboratory hours. 1 credit. A basic introduction to rock climbing, utilizing lectures, readings, and rock climbing experiences. Emphasis will be placed on safety, equipment, and conservation, as well as techniques of belaying, climbing, and rappelling. Attention is given to the importance of communication and personal feelings of mastery and success in outdoor adventure recreation. Course is taught evenings and weekends as found in the *Schedule of Classes*.

REC 261 Recreation, Parks, and Tourism in Modern Society. Semester course; 3 lecture hours. 3 credits. Introduction to the historical and philosophical foundations of leisure and recreation; implications of continued growth of the leisure phenomenon in contemporary society.

REC 300 Wilderness Education I. Semester course; 1 lecture hour. 1 credit. Corequisite: REC L300. Designed to examine the principal philosophical foundations of adventure theory and wilderness leadership.

Concepts of judgment, decision making, leadership and environmentally correct practices are introduced.

REC L300 Wilderness Education I Laboratory. Semester course; 2 laboratory hours. 1 credit. Corequisite: REC 300. Designed to practice the principal philosophical foundations of adventure theory and wilderness leadership through field experiences.

REC 301 Wilderness Education II. Semester course; 1 lecture hour. 1 credit. Prerequisites: REC 300 and REC L300. Corequisite: REC L301. Explores the theoretical foundations involved in utilizing the wild outdoors with minimal impact. Principles of wilderness ethics, land stewardship, expedition behavior, and technical skills are introduced.

REC L301 Wilderness Education II Laboratory. Semester course; 2 laboratory hours. 1 credit. Prerequisites: REC 300 and REC L300. Corequisite: REC 301. Designed to practice the principles and techniques of wilderness ethics, land stewardship, expedition behavior and back country travel.

REC 303 Leisure Delivery Systems. Semester course; 3 lecture hours. 3 credits. Evaluation of public, private, and commercial agencies that provide recreation services. Particular emphasis is given to the types of leisure activities offered in relationship to the recreation market.

REC 320 Recreation Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSE 241-242. Examines various approaches to the study of leisure. Assesses the use of free time and the expenditure of time and money to fulfill leisure needs.

REC 331 Recreation Site Selection and Analysis. Semester course; 3 lecture hours. 3 credits. An overview of the site selection and development processes will be analyzed as individual elements and the interrelationships among all the elements will be reviewed. Consideration will be given to the social, political, physical, and legal aspects of the park planning process.

REC 332 Recreation Site Design and Development. Semester course; 2 lecture hours. 2 credits. Prerequisite: REC 331. General principles of planning and development of basic recreation areas and facilities; specific principles of design relating to outdoor recreation facilities; standards relative to space requirements, location, and programs; trends in site design and development.

REC 341 Introduction to Travel and Tourism. Semester course; 3 lecture hours. 3 credits. Examination of historical perspective, basic policy issues, and social and economic impact of the travel and tourism field. Functions, programs, and objectives of various types of travel and tourism organizations will be studied.

REC 371 Introduction to Therapeutic Recreation. Semester course; 3 lecture hours. 3 credits. An introduction to services for special populations. Examines the various agencies and institutions which provide such services as well as the professional competency necessary for the delivery of leisure services to the handicapped; the physically, socially, and mentally disabled; and the aged. Introduces the student to client assessment and programming.

REC L371 Introduction to Therapeutic Recreation Laboratory. 2 laboratory hours. 1 credit. Corequisite: REC 371. An introduction to field experience in therapeutic recreation settings. The acquisition of field experience concurrent with classroom introductory material regarding leisure services for populations with physical, mental, emotional, or social limitations, offers professional practice, individualized feedback, and a holistic view of therapeutic recreation service for students. This laboratory requires a minimum of 36 contact hours in three specified settings under supervision of Certified Therapeutic Recreation Specialists.

REC 395 Recreation Program Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: REC 195. Principles of recreation program development; intensive study of the recreation program areas available to participants; analysis of the methods and techniques of program implementation and program evaluation.

REC 403 Management of Recreation, Park, and Tourism Agencies. Semester course; 3 lecture hours. 3 credits. Principles of the

administrative process. Deals with basic procedures of recreation administration, with particular emphasis on legal foundations, organizational structure, management theory, personnel practices and policies, legal liability, activity and liability insurance.

REC 404 Revenue Sources for Parks and Recreation. Semester course; 3 lecture hours. 3 credits. Examination of the financing, budgeting, and marketing techniques used to develop and operate leisure service opportunities.

REC 431 Advanced Recreation Facilitation Techniques. Semester course; 3 lecture hours. 3 credits. The course provides a study of advanced leadership, group dynamics, and human relationships used in leisure delivery systems. Students acquire skills in facilitation techniques including decision-making, problem-solving, conflict management, and evaluation strategies.

REC 442 Group Travel Management. Semester course; 3 lecture hours. 3 credits. A study of the processes and procedures involved in the planning and organization of group travel. Emphasis will be given to the economic and political dimensions of travel, deregulation, how travel agencies function, professional liability, and future trends in the field.

REC 445 Conference and Convention Planning. Semester course; 3 lecture hours. 3 credits. The planning, organizing, promoting, and implementing of conferences and conventions. Included will be the development of conference programming, financing, and public relations as well as negotiations with meeting facilities, hotels, and food services agencies.

REC 461 Recreation Resource Management. Semester course; 3 lecture hours. 3 credits. A comprehensive overview of recreation resource management institutions, both public and private. Emphasis is given to the public sector at the federal, state, and local levels. Professional, service, and educational organizations contributing to outdoor recreation are examined. The legal framework operating within recreation resource management also is covered.

REC 465 Park Operations and Maintenance. Semester course; 3 lecture hours. 3 credits. The purpose of this course is to gain an understanding of the concepts, principles, and practices of park operations and maintenance. Quantitative and qualitative resource evaluation will be emphasized. Special consideration is given to methods and techniques for determining management and operations policies.

REC 471 Clinical Practice and Procedures in Therapeutic Recreation. Semester course; 3 lecture hours. 3 credits. Designed to equip students with the knowledge and skills required of therapeutic recreation specialists in clinical practice. Exposure to standards of practice, activity analysis, documentation, and holistic approaches to delivering services will be included.

REC 472 Therapeutic Recreation Program Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: REC 371; open to therapeutic recreation option majors only. Instructs students in the techniques of assessment, planning, implementation, and evaluation of therapeutic recreation programs for a variety of clients with special needs.

REC 473 Leisure and the Aged. Semester course; 3 lecture hours. 3 credits. An analysis of the leisure needs of the aged. The need for specialized leisure programs for the aged in a variety of community and institutional settings will be explored. Preretirement counseling will be emphasized.

REC 475 Recreation in Correctional Settings. Semester course; 3 lecture hours. 3 credits. A survey of recreational needs of inmates in adult and juvenile correctional institutions, short-term institutions, and community-based correctional institutions. The development of specialized programming and the role of recreation in the rehabilitative process will be examined.

REC 476 Leisure Counseling. Semester course; 3 lecture hours. 3 credits. An introduction to the theory and application of leisure counseling for the general public and those with special needs. The use of leisure counseling as a means of client evaluation and assessment also will be examined.

REC 480 Specialized Recreation Programs for Handicapped Children. Semester course; 3 lecture hours. 3 credits. Development of recreation programs for handicapped children in schools, other institutions, and community settings. Consideration will be given to the development of leisure skills and goal accomplishments.

REC 490 Seminar. Semester course; 3 seminar hours. 3 credits. Advanced seminar in recreation, parks, and tourism that analyzes in-depth special problem areas and current issues. Independent research on special projects.

REC 491 Topics in Recreation. Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of nine credits in all departmental topics courses that may be applied to the major. An in-depth study of specific content areas in recreation, park, and tourism operations. See the *Schedule of Classes* for specific topics to be offered each semester.

REC 492 Independent Study in Recreation. Semester course; 16 credits. Prerequisite: Permission of departmental chair. Under the supervision of a faculty member, the student selects a topic of concern to investigate. Each student must present his/her findings in writing and pass an oral examination before a faculty committee.

REC 493 Internship. Semester course; 8 credits. Prerequisite: Senior standing. Opportunities are offered for the student to gain practical experience in a variety of public, private, and commercial agencies. The student will complete an individualized course of study during a 10-week program consisting of 400 clock-hours.

REC 506 Contemporary Issues in Therapeutic Recreation. Semester course; 3 lecture hours. 3 credits. Prerequisite: REC 371, 472 or equivalent. An examination of contemporary issues affecting the delivery of leisure services and programs to disabled persons. Both the scope and nature of leisure opportunities available to disabled individuals are considered.

REC 510 Tourism Policy. Semester course; 3 lecture hours. 3 credits. The examination of tourism policy with emphasis upon components involved in the formulation and implementation of public policy. The course will include an analysis of the legislative programs of regional and national tourism organizations.

Courses in Reading and Study Skills

RSS 100 Reading and College Study Skills. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of effective reading and study skills at the college-level. Emphasis is placed on vocabulary development as well as reading and study strategies.

RSS 101 Advanced Reading, Study, and Communication Skills. Semester course; 3 lecture and laboratory hours. 3 credits. Prerequisite: EDU 100, adviser's recommendation, or instructor's permission. A study of advanced reading and study skills at the college-level. Students develop and apply critical reading-thinking skills, library research skills, and advanced vocabulary.

XIV PART

School of Engineering

Henry A. McGee, Jr.

Founding Dean and Professor of Chemical Engineering (1995)
BChE 1951 and PhD 1955 Georgia Institute of Technology

Robert J. Mattauch

Associate Dean for Administration, Commonwealth Professor and Chair, Electrical Engineering Program (1996) BS 1962 Carnegie Institute of Technology, ME 1963 and PhD 1967 North Carolina State University

Thomas W. Haas

Associate Dean for Academic and Faculty Affairs, Director, Commonwealth Graduate Engineering Program and Professor of Mechanical Engineering (1983) BS 1961 State University of New York, Buffalo, MS 1962 Pennsylvania State University, MA 1965 and PhD 1968 Princeton University

Gerald E. Miller

Associate Dean for Graduate Affairs and Professor and Chair, Biomedical Engineering Program (1996) BS 1971, MS 1975, and PhD 1978 Pennsylvania State University

Robert A. Heinz

Associate Dean for Industrial Affairs and Professor of Mechanical Engineering (1997) BS 1965 and MS 1966 Lehigh University, PhD 1971 Carnegie Mellon University

Susan F. Younce

Director of Administration and Finance and Assistant Professor of Engineering (1981) BA 1974 University of Richmond; MS 1991 Virginia Commonwealth University

Mission of the School

Founded in 1995, the School of Engineering is the result of a collaboration rare in the history of higher education in Virginia. Virginia Commonwealth University has, with the support of Virginia Polytechnic Institute and State University, created a school that brings innovative engineering education to central Virginia. Building reciprocal relationships with business and industry in the greater Richmond area, contributing to the region's manufacturing enterprises, and aggressively developing an international orientation, the school has developed programs of research and study that are sensitive to the unique demands of its time and culture.

Students are offered an integrated and multidisciplinary curriculum in mechanical, chemical, and electrical engineering. Supported by the internationally recognized strengths of VCU's Medical College of Virginia and the cutting edge developments to be generated by the Virginia Biotechnology Research Park, the School of Engineering at VCU has innovative engineering curricula that empha-

size creativity and imagination. By encouraging their interaction with practicing engineering professionals, students are continually aware of the real-world application of their research and their studies.

Serving the best and the brightest engineering students from across Central Virginia, supporting VCU's dedication to diversity by opening doors of opportunity to underrepresented populations in the engineering profession, the school continually strives to enrich the technological and intellectual climate of the metropolitan area.

Discovering new knowledge is the goal of the best of the nation's schools of engineering. The School of Engineering at Virginia Commonwealth University celebrates not only the discovery of knowledge, but also the creative integration and application of that knowledge.

Curricula

Intellectual creativity and integration, which are essential to a successful engineering career in today's marketplace, are central components of the School of Engineering's mission. The curricula of the School of Engineering offer students a unique opportunity to synthesize intuitive thought with traditional analytical approaches, to mesh a recognition of global, social, political and environmental concerns with traditional reductionist thought. Practical application and innovative theory are firmly joined in the school's curricula. The programs are designed to:

- develop breadth of expertise and individuality of method by encouraging concentration in a second discipline sufficient for a minor;
- require study in international relations and familiarity with culture;
- require study in biological sciences;
- address, via specialized presentations, the complexity and pervasiveness of contemporary issues, such as ethics and environmental impact;
- foster a student/faculty rapport highly conducive to effective advising, networking and the development of professional interpersonal skills;
- include multidisciplinary study throughout the curriculum; and
- require an intense summer practicum of all students.

The VCU Engineering practicum offers invaluable hands-on learning experience – an opportunity to make the classroom learning real. Required of all engineering candidates, a three-month, full-time practicum in either a manufacturing facility or a research laboratory is scheduled for the summer between the junior and senior year.

The curriculum fosters a collaborative model of learning and work, and offers an opportunity for students to combine engineering with a business orientation.

In addition to the curriculum requirements existing for each academic degree program, all students seeking a baccalaureate degree within the School of Engineering are required to fulfill the general education requirements.

Undergraduate Degree Programs

The School of Engineering offers bachelor of science degrees as follows:

- biomedical engineering
- chemical engineering
- electrical engineering
- mechanical engineering

Double Major (BS) in Engineering and Physics

The primary purpose of this double major program is to provide engineering students the opportunity to earn a major in physics, in addition to their major in engineering, in as little as one additional semester. The physics and mathematics requirements for the double major are the same as those for the BS in Physics. Within the double major, however, a select number of engineering courses are acceptable substitutes for required and elective physics/mathematics courses, as given in the list below:

Required Course	Acceptable Substitute	
PHY 340	EGR 304	Thermodynamics
PHY 376	ELE 309	Electromagnetic Fields I
PHY 450+490	EGR 402+403	Senior Design Studio
MAT 515	STA 541	Applied Statistics
Elective Course	Acceptable Substitute	
PHY 331	EGR 224	Electrical Circuits II
PHY 407	MCE 436	Engineering Materials
PHY 407	BME 427	Biomaterials
PHY 432	ELE 307	Electronic Circuits
PHY 491	ELE 435	Fabrication and Laboratory

With regard to general education requirements, students must fulfill the requirements of their primary major.

Minor Areas of Concentration

To augment career goals, engineering students are encouraged, in addition to the major, to elect a minor area of concentration for the study of a discipline of secondary interest. Students interested in pursuing a minor should discuss their intentions with their adviser or the program chair.

A minor designation requires a minimum number of credit hours and a minimum grade-point average (GPA) of 2.0 in the minor. The minor becomes official only after University Enrollment Services/Records and Registration has received the *Change of Major/Minor* form signed by the chair of the appropriate program.

Minors in mechanical engineering, electrical engineering, and chemical engineering are offered by the School

of Engineering. These minors are open only to students in the School of Engineering. Engineering students are encouraged to consider pursuing a minor in chemistry for majors in chemical engineering as well as physics, mathematical sciences, business, or physiology by all engineering majors.

Graduate Studies

The Biomedical Engineering Program, which began in 1984, offers advanced training leading to both master's (MS) and doctoral (PhD) degrees. The Biomedical Engineering Program is part of the School of Engineering but is located on the MCV Campus and has well-established ties to the schools on the MCV Campus. The Biomedical Engineering Program also participates in the MD/PhD program with the School of Medicine.

Through a cooperative agreement with Virginia Tech, students in the Biomedical Engineering Program may access courses and/or research opportunities at Virginia Tech. The Commonwealth Graduate Engineering Program, which is coordinated by Virginia Commonwealth University, delivers MS degree offerings from the University of Virginia, Virginia Tech and Old Dominion University via interactive video telecommunications (refer to the *Graduate Bulletin* for details).

Admissions

Applicants to the School of Engineering must submit a minimum of 4 units in mathematics (through advanced algebra and trigonometry) and a minimum of 3 units in science (which must include biology, chemistry and physics) and 3 units or more in a foreign language. Recommended is a rigorous high school program. Preference for admission will be given to those applicants presenting honors and/or AP credits. Students desiring consideration for admission should present:

Minimum GPA:	3.3
Minimum SAT:	1180
Minimum Class Rank:	top quartile

A brief essay and a personal interview are also requested (see application form). These same two items are also requested of students who wish to enroll in the University Honors Program. Preference will be given to the most qualified applicants.

Academic Policies

Students in the School of Engineering must attain a grade of "C" or better in all engineering courses taken. If a student receives a grade below "C" in any engineering course, that course must be retaken until the student receives a grade of "C" or better.

Students may in some cases be required to take foundation courses as the result of placement tests in order to prepare themselves to enter the required courses in mathematics, sciences or languages. Credit received for these foundation courses does not count towards the baccalaureate degree in engineering.

Graduation Requirements

The Bachelor of Science curriculum in the School of Engineering requires a minimum of 130 credits, and includes Academic Campus Requirements (see Part VI of this *Bulletin*), General Education Requirements for the School of Engineering, and departmental major requirements.

General Education Requirements

All students seeking a baccalaureate degree within the School of Engineering are required to fulfill the University general education requirements in addition to the curriculum requirements of the engineering degree program.

1. Communicating

Students should demonstrate effective oral and written communication skills. They should be able to communicate ideas clearly and effectively, consistent with the standards of the engineering profession.

All engineering students will demonstrate competence in English composition by successfully completing ENG 101-200, Composition and Rhetoric (3-3), during their freshman and sophomore years.

Both oral and written communication skills will be stressed and developed in all engineering classes, as appropriate. In particular, the two capstone design courses taught in the senior year of each of the three disciplines will be designated as writing intensive courses. In these senior design classes, students will prepare written reports that will be critiqued from both a technical and a writing standpoint. The reports submitted will be redone as required as the students write to learn and ultimately, meet the standards of written communication required in industry. Also, the reports on the design projects will be presented orally to their classmates and the public, using state of the art presentation techniques.

2. Ethics

Students will have an understanding of the ethical characteristics of the engineering profession and practice as well as a sensitivity to the socially-related technical problems which confront the profession and the engineer's responsibility to protect both occupational and public health and safety. Students will be able to identify and analyze ethical issues in engineering.

Engineering ethics will be introduced in the course EGR 101, Introduction to Engineering, as well as all other engineering courses, as appropriate. Engineering students will also take one of the following courses in ethics offered by the PRS Department.

RST 340 Global Ethics and the World's Religions	3
PHI 211 History of Ethics	3
PHI 212 Ethics and Applications	3
PHI 213 Ethics and Health Care	3

3. Quantity and Form

Students will demonstrate a good knowledge of the application of calculus and differential equations in the analysis of engineering problems. They should develop analytical skills and logical reasoning powers regarding the application of these mathematical methods in engineering.

All engineering students will take MAT 200-201, Calculus with Analytic Geometry (4-4) and MAT 301, Differential Equations (3). Furthermore, physics and engineering analysis courses will be calculus-based.

Also, all students will take a calculus-based course in applied statistics in their junior year. Statistical analysis will be introduced where appropriate in all engineering laboratories and course work.

4. Science and Technology

Engineering students will have an understanding of the process and concepts of modern experimental science including laboratory application of the fundamental ideas and methods.

All engineering students will successfully complete CHE 101, General Chemistry, and CHE L101, General Chemistry Laboratory, plus select a course in the life sciences from the following:

BIO 101 Life Science	3
BIO 102 Science of Heredity	4
BIO 103 Environmental Science	4
BIO 151, 152 Introduction to Biological Sciences I,II	3, 3

5. Interdependence

Students will develop an awareness of the strong global interdependence of culture, economics, and society and prepare for a possible international career in engineering by successfully completing one internationally focused course in the social sciences and one global culture course in the humanities, including foreign languages (at the intermediate-level).

Courses (1.5 credit minimum) will be selected from the following lists. (Other appropriate courses may be selected with the approval of an adviser.)

Social Sciences

POS/INT 105 International Relations	3
POS/INT 361 Issues in World Politics	3
POS/INT 365 International Political Economy	3
ECO 308 Economic Geography	3
ECO 325 Environmental Economics	3
BUS 319 Organizational Behavior	3
BUS 378 International Marketing	3
BUS 418 International Management	3
GEO 322 World Political Geography	3

Humanities/Languages

RST 340 Global Ethics and the World's Religions	3
SPA 201 Intermediate Spanish	3
FRE 201 Intermediate French	3
GER 201 Intermediate German	3
POR 201 Intermediate Portuguese	3
ITA 201 Intermediate Italian	3
RUS 201 Intermediate Russian	3
CHI 201 Intermediate Chinese	3
JPN 201 Intermediate Japanese	3

6. Visual and the Performing Arts

Students should demonstrate an enhanced understanding of and experience of the various visual and performing arts. They should understand the process of artistic expression and be able to respond to artistic work from a variety of perspectives and contexts.

Engineering students will take one course (1.5 credit minimum) in an appropriate area of the visual or performing arts from the following list. (Other appropriate courses may be selected with the approval of an adviser.)

Art Education

AEN 121 The Individual in the Creative Process	3
AEN 340 Exploring the Visual Arts	3

Art Foundation

AFO 101 Communication and Presentation	2
AFO 121 Introduction to Drawing	2

Communication Arts and Design

CDE 191 Studio Topics in Communication Arts and Design	1-3
--------------------------------------------------------	-----

Crafts

CRA 201 Metalsmithing	4
CRA 211 Jewelry	4
CRA 261,262 Beginning Textiles	4
CRA 221 Woodworking Techniques	4
CRA 241 Ceramics: Handbuilding	4
CRA 242 Ceramics, Wheelthrowing	4
CRA 251,252 Introduction to Glassworking	4

Dance/Choreography

DAN 105 Improvisation	2
DAN 114 Ballet Technique	1-2

DAN 121 Tap Technique	2
DAN 126 African-Caribbean Dance	1-2
Interior Design	
IDE 103 Introductory Studio Course	2
Music	
APM 191-192 Class Lessons in Piano	1-1
APM 193-194 Class Lessons in Voice	1-1
APM 195-196 Class Lessons in Guitar	1-1
APM 197-198 Class Lessons in Organ	1-1
MHT 117 Computers in Music	1-1
Painting and Printmaking	
PAP 155-156 Drawing and Painting Basics	1-1
Photography	
PTY 243 Photography	2
PTY 245 Design Photography I	4
PTY 392 Film Animation	4
Sculpture	
SCU 211, 212 Sculpture	4, 4
Art History	
ARH 103,104 Survey of Western Art	3, 3
ARH 145,146 Survey of Oriental Art	3, 3
ARH 207 Introduction to Non-Western Art	3
Interior Design	
IDE 251, 252 Design in Historic Interiors and Architecture	3, 3
Music	
MHT 100/200 Special Offerings in Music	1-3
MHT 105 Introduction to Writing Music	3
MHT 201 Acoustics	3
MHT 243 Music Appreciation	3
MHT 250/AAS 250 Introduction to African-American Music	3
MHT 271 Jazz History and Literature	3
MHT 280 Survey of Twentieth Century American Popular Music	3
MHT 303 304 Piano Literature	3
Theatre	
THE 107,108 Introduction to Stage Performance	3-3
THE 300 The Enjoyment of Theatre	3-3
THE 307 History of Theatre	3

7. Humanities and Social Sciences

Study in the humanities and social sciences is intended to make engineering students fully aware of cultural traditions as well as relationships in society. As a minimum, students should successfully complete one approved course in the Humanities and one approved course in the Social Sciences. These courses should be selected to broaden the cultural, historical, and artistic perspectives of engineering students or otherwise to widen their interests and to continue their intellectual growth, keeping in mind that these courses are intended to serve personal development and not vocational needs.

Courses (1.5 credit minimum) will be selected from the following lists. (Other appropriate courses may be selected with the approval of an adviser.) Some of these courses may also satisfy the other general education requirements listed above.

Recommended Courses in the Humanities are:

Philosophy	
PHI 104 Modern Western Philosophy	3
PHI 211 History of Ethics	3
PHI 212 Ethics and Applications	3
PHI 213 Ethics and Health Care	3
PHI 221 Critical Thinking	3

Religious Studies

RST 311,312 Religions of the World	3, 3
RST 340 Global Ethics and the World's Religions	3

History

HIS 101,102 Introduction to European History	3, 3
HIS 103, 104 Introduction to American History	3, 3
HIS 105,106 Introduction to African History	3, 3
HIS 107, 108 Introduction to Asian History	3, 3

Literature

ENG 201,202 Western World Literature	3, 3
ENG 203,204 British Literature	3, 3
ENG 205,206 American Literature	3, 3
ENG 215 Introduction to Literary Genre	3
ENG 216 Stories	3
ENG 236/WST 236 Women in Literature	3
ENG 241 Introduction to Shakespeare	3
ENG 291 Topics in Literature	3

Recommended Courses in the Social Sciences are:

Sociology

SOC 101 General Sociology	3
---------------------------	---

Psychology

PSY 101 Introduction to Psychology	3
------------------------------------	---

Political Science

POS 103 U.S. Government	3
POS 201 Introduction to Politics	3

Anthropology

ANT 103 Cultural Anthropology	3
-------------------------------	---

Economics

ECO 210,211 Principles of Economics	3, 3
-------------------------------------	------

Policy for Honors Courses

Engineering students in the University Honors Program may substitute honors modules for those courses listed above under the following guidelines.

Every semester, the director of the Honors Program will review honors courses to be offered and recommend those considered to be suitable to meet the School of Engineering General Education Requirements, to the School of Engineering Undergraduate Curriculum Committee for its consideration and approval. The list of those approved by the committee will, in turn, be forwarded to the engineering faculty advisers for their use with the engineering honors students.

Student Advising

Every student admitted to the School of Engineering is assigned a faculty adviser from his/her program of study. The faculty adviser assists the student in planning course work, becoming familiar with University services, interpreting University rules and procedures, and defining career objectives.

While the faculty of the School of Engineering provide timely and accurate information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his/her program. Students should be familiar with curriculum requirements, appropriate course sequences, prerequisites, and academic regulations.

Undergraduate Credit by Examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the School of Engineering provides students limited opportunities to accelerate their education through "credit by examination." A full description of this program appears in Part II of this *Bulletin*.

Cooperative Education Program

Partnership arrangements between the School of Engineering and local or nearby industry offer outstanding opportunities for engineering students eligible for the University Cooperative Education Program. Qualified students placed with an employer will either alternate several semesters of full-time study with several semesters of work experience or combine study with part-time work experience during the same semester.

University Honors Program

The University Honors Program provides academic and other opportunities for academically superior students. Qualified School of Engineering students may follow a program of study that leads to graduation in the Honors Program, a complete description of which is given in Part VII of this *Bulletin*.

Transfer Policies

Transfer students who plan to enroll in the undergraduate programs in the School of Engineering must meet the admission requirements of the University, keeping in mind the following:

1. Calculation of the GPA for admittance into the School of Engineering is based on grades earned at all institutions attended.
2. Transfers require a minimum GPA of 3.0 (on a 4.0 scale) with no grades below "C." All courses of "C" or better will transfer except that mathematics, science and engineering courses must be equivalent to those offered by the School of Engineering and be "B" or better in order to transfer.
3. With the exception of general education requirements, transfer of courses from all institutions is limited to courses required by the School of Engineering in the freshman and sophomore years.

The School of Engineering has articulation agreements with J. Sargeant Reynolds Community College, John Tyler Community College, and Virginia Union University.

Accreditation

In keeping with standard procedures, the engineering program will seek accreditation by the Accreditation Board of Engineering and Technology (ABET) upon graduation of the first class. The ABET team will visit the School of Engineering in Fall 2000, so that the first

graduates will be accredited retroactively. Program design and standards as well as the commitment of the University are intended to assure accreditation.

Courses in Engineering

EGR 101 Introduction to Engineering. Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 4 credits. Corequisites: CHE 101 and laboratory, MAT 200. This course introduces students to the science and art of engineering through basics of electrical, computer, and mechanical systems. This introduction will consider an electromechanical system in modular form. Each module will be studied and decomposed into sub-modules. This process will be repeated until fundamental mechanical and electrical elements are reached.

EGR 102 Engineering Concepts. Semester course; 3 lecture, 1 recitation and 3 laboratory hours. 4 credits. Prerequisites: EGR 101. Problem solving using fundamental engineering concepts. Use of application software for spreadsheets, engineering graphics, and problem solving. Introduction to conservation of mass, momentum, energy with special emphasis on materials and materials balances. Introduction to statics with applications to plane truss analysis and beams. Introduction to computer programming. Introduction to the engineering profession, total quality management, engineering economics, problem solving and design, and ethics. Emphasis is on solving engineering problems using computers and numerical techniques.

EGR 291 Special Topics in Engineering. Semester course; variable 1-5 credits. Prerequisite: To be determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Grade Option: P/F or Normal Letter Grading. Option will be established by the instructor. See the *Schedule of Classes* for specific topics to be offered and prerequisites.

EGR 301 Transport Phenomena I. Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHY 207 and MAT 301 or permission of the instructor. Basic and applied fluid mechanics; fluid properties; application of the Navier-Stokes equations; macroscopic mass, momentum, and energy balances; dimensional analysis; laminar and turbulent flow; boundary layer theory; friction factors in pipes and packed beds; drag coefficients; compressible flow; flow measurements; numerical simulation; applications to the operation and design of turbo machinery.

EGR 302 Transport Phenomena II. Semester course; 3 lecture hours. 3 credits. Prerequisites: EGR 301 or permission of the instructor. Basic and applied mass transfer; diffusion and rate concepts; evaporation; boiling and condensation; dispersion coefficients; stagnant film; falling film; porous membrane; packed bed; numerical simulation; applications to industrial processes.

EGR 304 Thermodynamics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 207 and MAT 301 or permission of the instructor. Fundamental concepts of thermodynamics; first and second law of thermodynamics; entropy and equilibrium; equations of state; properties of pure fluids; molecular interpretation of thermodynamic properties; phase equilibria; work and heat; power cycles; chemical reactions.

EGR 305 Sensors/Measurements. Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHY 208 and MAT 301 or permission of the instructor. Introduction to sensors and their utilization for measurement and control; sensor types: electro-mechanical, electro-optical, electro-chemical; applications in medicine, chemical manufacturing, mechanical control, and optical inspection.

EGR 402-403 Senior Design Studio. Continuous course; 2 lecture hours and 3 laboratory hours. 3-3 credits. Prerequisites: Senior standing. Engineering product or system design projects carried out by small interdisciplinary student teams in cooperation with industry. This is a writing intensive course requiring the preparation of economic, marketing and engineering feasibility studies, management proposals for funding, project planning and status reports, and final comprehensive reports. Oral communication skills are also stressed

by requiring students to present these reports to their classmates, industry, and the public, using state of the art presentation techniques.

EGR 410 Engineering Laboratory/Manufacturing Practicum. Semester course; variable; 1-6 credits. Prerequisites: Senior standing or permission of the instructor. Engineering products, manufacturing systems design, or research projects carried out in a work environment either on the factory floor or in an industrial or University laboratory. Students will have practical and "hands-on" experience in a "real world" situation. Written and oral presentations will be required.

EGR 490 Engineering Seminar. Semester course; variable 1-3 credits. May be repeated with different content. Grade Option: P/F or Normal Letter Grading. Option will be established by the instructor. Prerequisite: Permission of the instructor. A series of specialized topics in engineering that are of general interest but not covered by an existing course or program. Lectures will be presented in seminar format by speakers from business, industry, government and academia. Subjects will be multidisciplinary in nature.

EGR 491 Special Topics in Engineering. Semester course; variable 1-5 credits. Prerequisite: Determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. Grade Option: P/F or Normal Letter Grading. Option will be established by the instructor. See the *Schedule of Classes* for specific topics to be offered and prerequisites.

EGR 492 Independent Study in Engineering. Prerequisite: Permission of the instructor. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation, and/or laboratory experimentation. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Written and oral progress reports as well as a final report and presentation are required. May be repeated with different content. Grade Option: P/F or Normal Letter Grading. Option will be established by the instructor.

Biomedical Engineering Program

Gerald E. Miller

Associate Dean for Graduate Affairs and Professor and Chair, Biomedical Engineering Program (1996) BS 1971, MS 1975, and PhD 1978 Pennsylvania State University

Bowlin, Gary Lee (1997) *Assistant Professor* BE 1988 Youngstown State University, MS 1990 University of New Hampshire, PhD 1996 University of Akron

Fei, Ding-Yu (1985) *Associate Professor* BS 1963 and MS 1965 Tsinghua University; PhD 1986 Pennsylvania State University

Hsia, Peng-Wie (1990) *Assistant Professor* BS 1977 Chung-Yuan University; MS 1981 Northeastern University; MSE 1984 and PhD 1987 University of Michigan

Lenhardt, Martin L. (1971) *Professor and Associate Chair* BS 1966 and MA 1968 Seton Hall University, PhD 1970 Florida State University

Wayne, Jennifer Susan (1991) *Associate Professor and Graduate Program Director* BS 1983 Virginia Polytechnic Institute; MS 1984 Tulane University; PhD 1990 University of California at San Diego

Biomedical engineering applies engineering expertise to analyze and solve problems in biology and medicine in order to enhance health care. Students involved in biomedical engineering learn to work with living systems and to apply advanced technology to the complex problems of medical care. Biomedical engineers work with other health care professionals including physicians, nurses, therapists, and technicians towards improvements in diagnostic, therapeutic and health delivery systems. Biomedical engineers may be involved with designing medical instruments and devices, developing medical software, develop new procedures or conduct state-of-the-art research needed to solve clinical problems.

There are numerous areas of specialization and course work within biomedical engineering. These include (1) **bioinstrumentation**, the application of electronics and measurement techniques to develop devices used in the diagnosis and treatment of disease; this includes heart monitors, intensive care equipment, cardiac pacemakers and many other electronic devices; (2) **biomaterials**, the development of artificial and living materials used for implantation in the human body; includes materials used for artificial heart valves, kidney dialysis cartridges, artificial arteries, artificial hips and artificial knees; (3) **biomechanics**, the study of motion, forces, and deformations in the human body; this includes the study of blood flow and arterial disease, forces associated with broken bones and their associated repair mechanisms, mechanisms of blunt trauma including head injuries, orthopedic systems, and the forces and movement associated with human joints such as the knee and hip; (4) **tissue and cellular engineering**, the application of biochemistry, biophysics and biotechnology towards development of new cellular and tissue systems and an understanding of disease processes; this includes development of artificial skin and organs, cell adherence to artificial materials to prevent rejection by the body, and the development of new genetic cellular systems to treat diseases; (5) **medical imaging**, the development of devices and systems to image the human body to diagnose diseases; this includes the development and data processing of the CAT scan, MRI (magnetic resonance imaging), medical ultrasound, x-ray, and PET (positron emission tomography); (6) **rehabilitation engineering**, the development of devices and prosthetics to enhance the capabilities of disabled individuals; this includes design of wheelchairs, walkers, artificial legs and arms, enhanced communication aids, and educational tools for the handicapped.

A unique aspect to the biomedical engineering program is the practicum series, BME 101, 201 and 301 which involves BME students participating in medical rounds in the MCV hospitals, in medical research laboratories throughout MCV and the Virginia Biotechnology Research Park, and in medical seminars, case studies and medical laboratories. This unique opportunity is the only one of its kind at any BME program in the nation and involves the cooperation of the Medical College of Virginia of Virginia Commonwealth University, one of the nation's largest and most prestigious medical centers.

Freshman Year in Biomedical Engineering

Fall Semester		Credits
CHE 101	General Chemistry	4
CHE L101	General Chemistry Laboratory	1
MAT 200	Calculus with Analytical Geometry	4
ENG 101	Composition and Rhetoric	3
EGR 101	Introduction to Engineering	4
BME 101	Biomedical Engineering Practicum I	1

17

Spring Semester

CHE 102	General Chemistry	4
CHE L102	General Chemistry Laboratory	1
MAT 201	Calculus with Analytical Geometry	4
EGR 102	Engineering Concepts	4

PHY 207	University Physics	5
		18
Sophomore Year in Biomedical Engineering		
Fall Semester		<i>Credits</i>
MAT 301	Differential Equations	3
ELE 206	Electrical Circuits	4
PIO 309	Quantitative Physiology	4
PHY 208	University Physics	5
BME 201	Biomedical Engineering Practicum II	1
		17
Spring Semester		
MAT 310	Linear Algebra	3
ELE 224	Electronic Circuits	4
PIO 310	Quantitative Physiology	4
ENG 200	Composition & Rhetoric II	3
MCE 202	Mechanics of Deformables	3
		17
Junior Year in Biomedical Engineering		
Fall Semester		
BME 307	Biomedical Instrumentation	4
BME 310	Biomechanics	4
BME 301	Biomedical Engineering Practicum III	1
	Technical Elective	3
	General Education Elective	3
		15
Spring Semester		
BME 308	Biomedical Signal Processing	4
BME 427	Biomaterials	3
BME 303	Biotransport Processes	3
	Technical Elective	3
	General Education Elective	3
		16
Senior Year in Biomedical Engineering		
Fall Semester		
EGR 402	Design Studio I	3
	Technical Elective	3
	Technical Elective	3
	General Education Elective	3
	General Education Elective	3
		15
Spring Semester		
EGR 403	Design Studio II	3
	Technical Elective	3
	Technical Elective	3
	General Education Elective	3
	General Education Elective	3
		15
TOTAL MINIMUM REQUIREMENT		130

Biomedical Engineering students must select all technical electives from one of the four technical elective tracks. All General Education electives must follow guidelines established by both the University and the School of Engineering.

Technical Elective Tracks

Pre-Medical Track

BIO 101	Life Science	4
BIO L101	Life Science Laboratory	1
BIO 218	Cell Biology	3
BIO 302	Embryology	4
CHE 301	Organic Chemistry I	3
CHE L301	Organic Chemistry Laboratory I	2
CHE 302	Organic Chemistry II	3
CHE L302	Organic Chemistry Laboratory II	2

Biomechanics and Biomaterials Track

BME 405	Finite Elements in Solid Mechanics	3
BME 403	Tissue Engineering	3
BME 406	Artificial Organs	3
MCE 420	CAE Design	3
MCE 421	CAE Analysis	3
MCE 428	Polymer Processing	3
MCE 436	Engineering Materials	3
MCE 437	Introduction to Polymer Engineering	3
MCE 438	Tribology	3
PHY 407	Mechanics of Solid Materials	3

Rehabilitation Engineering Track

BME 420	Rehabilitation Engineering	3
BME 421	Human Factors Engineering	3
BME 405	Finite Elements in Solid Mechanics	3
MCE 420	CAE Design	3
MCE 421	CAE Analysis	3
HED 426	Therapeutic Modalities	3
PHE 330	Motor Behavior	3
PHE 392	Kinesiology	3
PHE 492	Physiology of Exercise	3
HED 325	Treatment of Athletic Injuries	3
HED 425	Advanced Treatment of Athletic Injuries	3
PHE 495	Adaptive Physical Education	3

Instrumentation and Electronics Track

BME 408	Advanced Biomedical Signal Process.	3
BME 409	Microcomputer Applications in BME	3
CHE 409	Instrumentation Analysis	3
CHE L409	Instrumentation Analysis Laboratory	1
ELE 254	Digital Logic Design	3
ELE 303	Electronic Devices	3
ELE 307	Electronic Circuits	4
ELE 309	Electromagnetic Fields I	3
ELE 310	Electromagnetic Fields II	3
ELE 335	Signals & Systems I	3
ELE 336	Signals & Systems II	3
ELE 364	Microcomputer Systems	4
ELE 426	Computer Organization & Design	3
ELE 427	Advanced Digital Design	3
ELE 445	Digital Signal Processing	3
ELE 454	Automatic Control	3
ELE 455	Modern Digital Control	3

Courses in Biomedical Engineering

BME 101 Biomedical Engineering Practicum I. Continuous course; 1 lecture hour. 1 credit. Prerequisites: Registration in Biomedical Engineering Program and permission of course coordinator. This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering freshman. Students will tour medical facilities, clinics, and hospitals and will participate in medical seminars, workshops, and medical rounds. Students will rotate among various programs and facilities including biomedical engineering, orthopaedics, cardiology, neurology, surgery, otolaryngology, emergency medicine, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics, and internal medicine.

BME 201 Biomedical Engineering Practicum II. Continuous course; 1 lecture hour. 1 credit. Prerequisites: Registration in the Biomedical Engineering Program as a sophomore or higher classification and permission of course coordinator. This course involves the

introduction of clinical procedures and biomedical devices and technology to biomedical engineering sophomores. Students will tour medical facilities, clinics, and hospitals and will participate in medical seminars, workshops, and medical rounds. Students will rotate among various programs and facilities including biomedical engineering, orthopaedics, cardiology, neurology, surgery, otolaryngology, emergency medicine, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics, and internal medicine. Continuation of BME 101.

BME 301 Biomedical Engineering Practicum III. Continuous course; 1 lecture hour. 1 credit. Prerequisites: Registration in Biomedical Engineering Program as a junior or higher classification and permission of course coordinator. This course involves the introduction of biomedical and clinical research programs and procedures and biomedical devices and technology to biomedical engineering juniors. Students will tour medical research facilities, clinics, and hospitals and will participate in medical seminars, workshops, and medical research projects. Students will rotate among various programs and facilities including biomedical engineering, orthopaedics, cardiology, neurology, surgery, otolaryngology, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics, anatomy, physiology, biochemistry, and the Virginia Biotechnology Research Park. Continuation of BME 101 and 201.

BME 303 Biotransport Processes. Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 309 and 310 (or equivalents), BME 310, PHY 208, CHE 102. This course involves the study of mass, momentum and heat transfer within the human body, between the human body and the environment, and in the design of devices and systems that are involved with transport processes in a medical and clinical setting. The underlying principles of mass, momentum and energy transfer will be addressed followed by a study of such processes that are ongoing in the human body. The design of biomedical devices and systems that involve transport processes will also be studied.

BME 307 Biomedical Instrumentation. Continuous Course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: Junior Standing in engineering, at least two courses in electrical circuits. A study of the physical principles, design and clinical uses of biomedical instrumentation. Analysis and design of low frequency electronic circuits, pulse circuits and digital circuits which are most frequently used in biomedical instruments will be conducted. Analysis of biosensors, biopotential electrodes, the measurements of biopotential signals including electrocardiogram (ECG), electroencephalogram (EEG) and electromyogram (EMG), blood pressure, blood flow and respiratory system will also be conducted. A knowledge of basic electrical circuits is a prerequisite as is a knowledge of calculus and differential equations. Laboratory work on basic biomedical electronics and instrumentation will be performed.

BME 308 Biomedical Signaling Processing. Continuous course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: Calculus, differential equations, linear algebra, programming language. This course explores the basic theory and application of discrete-time signal processing techniques in biomedical data processing. Topics include discrete-time signals and systems, the Discrete Fourier Transforms (DFT), the Fast Fourier Transforms (FFT), digital filter design and implementation, and an introduction into processing of discrete-time random signals and multidimensional systems. Numerous biological signals and their processing are introduced. Specific examples using electrocardiograms will be learned. Laboratory works are required in this course.

BME 310 Biomechanics. Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: MCE 202 and MAT 301. This first course in biomechanics will analyze the forces, stresses, and strains in the human body during normal function. Emphasis will be placed on certain parts of the human body including hard (bone) and soft (cartilage, ligaments, tendons) tissues. A knowledge of statics and the mechanics of deformable bodies is required as is a knowledge of calculus, differential equations, and linear algebra. Exposure to human anatomy and physiology is also necessary, however, more in-depth anatomic study of the different parts of the body will be part of the material covered.

BME 403 Tissue Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in engineering, at least one course in physiology or anatomy. Study of the design, development, and clinical application of tissue engineered components for use in the

human body. Analysis of biology, chemistry, material science, engineering, immunology, and transplantation as pertains to various tissue engineered components including blood vessels, bone, cartilage, pancreas, liver, and skin.

BME 405 Finite Element Analysis in Solid Mechanics. Semester course; 3 lecture hours. 3 credits. Prerequisites: BME 310 and MAT 301. Finite element analysis as presented in this course is a numerical procedure for solving continuum mechanics problems that cannot be described by closed-form mathematical solutions. Emphasis will be placed on understanding the theoretical basis for the method, using a commercial software program, and understanding the volume of information that can be generated. Applications to both one- and two-dimensional problems in solid mechanics and biomechanics will be explored.

BME 406 Artificial Organs. Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 309 and 310 (or equivalents), BME 303, BME 310, and BME 307. This course explores the design, operating principles and practices regarding artificial organs and their use in the human body. Analysis of dialysis systems for kidney replacement, artificial hearts and heart assist devices, cardiac pacemakers, sensory organ assist and replacement devices, and artificial liver and pancreas devices. Design aspects, legal ramifications, regulatory issues and clinical implantation issues will be addressed.

BME 407 Physical Principles of Medical Imaging. Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing in engineering, at least two courses in electrical circuits. A study of the physical principles and basic clinical uses of medical imaging. Analysis of radiation and interaction of radiation, generation and control of X-rays, X-ray diagnostic methods, X-ray computed tomography (CT), magnetic resonance imaging (MRI) and ultrasonic imaging will be conducted. Basic principle of radionuclide imaging will also be introduced. A knowledge of basic electrical circuits is a prerequisite as is a knowledge of wave propagation, calculus and differential equations.

BME 408 Advanced Biomedical Signal Processing. Semester course; 3 lecture hours. 3 credits. Prerequisite: BME 308. This course will briefly review the basic theory of discrete-time signal processing techniques in biomedical data processing. The focus of this senior level biomedical signal processing is to explore the topics that are currently being investigated in the biomedical literature. Specific examples utilizing electrocardiogram (ECG) and other biological signals are provided. Some current topics covered are alternance phenomenon in biological system, late potential in ECG, intraportal in ECG and coherence analysis. These topics usually use the following advanced signal processing techniques including adaptive signal processing, spectral estimation, multirate signal processing etc. Specific examples using electrocardiograms will be learned.

BME 409 Microcomputer Applications in Biomedical Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisite: BME 307. This course services as the junior or senior selectives for students who are in the electrical concentration of the BME program. A background on BME 307 or its equivalent are strongly recommended prior to the course. This course teaches microcomputer applications (hardware and software) and solutions for the biomedical engineer. Previous experiences with PC hardware and software are very useful for this class; although, they are not required.

BME 420 Rehabilitation Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 309 and 310 (or equivalents), ELE 206 and 224 (or equivalents), BME 310. This course explores the principles and practices regarding rehabilitation engineering and the interaction of biomedical engineering with health care delivery to disabled individuals. Discussions of approaches to diagnosis and treatment of disorders involving motor and cognitive function will be included as will an analysis of the design of devices and systems to aid the disabled. Chronic disabilities such as cerebral palsy, muscular dystrophy and spinal cord disorders will be used as examples as will acute disabilities resulting from traumatic injuries.

BME 421 Human Factors Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 309 and 310 (or equivalents), and BME 310. This course explores the principles and practices regarding ergonomics and human factors engineering and the interaction of

biomedical engineering with human function. Analysis of the functions of the human body regarding motion, sensory mechanisms, cognition and interaction with the environment will be included. Interactions of the human body with technology, workplaces, equipment and computers will be examined. Design of workplaces for optimal human performance will be discussed. Analysis of lifting of heavy objects, design and arrangement of controls and displays, and interaction of humans to extreme work and environmental conditions will be incorporated.

BME 427 Biomaterials. Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing in engineering, at least one course in physiology or anatomy. Analysis of physical, chemical, thermal and physiological response factors associated with materials and implant devices used in the human body. Study of the properties of biomedical materials used as implants, prostheses, orthoses and as medical devices in contact with the human body. Computer modeling and experimental studies.

Chemical Engineering Program

Gary E. Wnek

Professor and Chair, Chemical Engineering Program (1996) BS 1977 Worcester Polytechnic Institute; PhD 1980 University of Massachusetts, Amherst

El-Shall, M. Samy (1989) *Professor of Chemistry and Affiliate Professor of Chemical Engineering* BSc 1976 Cairo University; MSc 1980 Cairo University; PhD 1985 Georgetown University

Erickson, Wayne D. (1996) *Professor* BS 1954 and MS 1955 Michigan State University; SM 1958 and ScD 1962 Massachusetts Institute of Technology

Fenn, John B. Research (1994) *Professor of Chemistry and Affiliate Professor of Chemical Engineering* BA 1937 Berea College; PhD 1940 Yale University

McGee, Jr., Henry A. (1995) *Founding Dean and Professor of Chemical Engineering* BChE 1951 and PhD 1955 Georgia Institute of Technology

McGrath, James E. (1997) *Adjunct Professor* BS 1956 St. Bernadine of Siena College; MS 1964 and PhD 1967 University of Akron

Mishra, Munmaya K. (1997) *Senior Scientist, Research and Development, Ethyl Corporation and Adjunct Associate Professor* MS 1978 Berhampur University; PhD 1981 Utkal University

Tepper, Gary C. (1997) *Assistant Professor* BS 1987 Pennsylvania State University; MS 1990 and PhD 1993 University of California, San Diego

Vance, Robert Leonard (1986) *Associate Professor of Preventive Medicine and Community Health and Affiliate Associate Professor of Chemical Engineering* BS 1962 Virginia Polytechnic Institute and State University; PhD 1969 University of Virginia; JD 1975 University of Richmond

Chemical Engineering is the most diverse of the engineering disciplines. Chemical engineers find employment in the manufacturing of chemicals, metals, plastics, ceramics, foodstuffs, petrochemicals, fertilizers, pharmaceuticals, and every material one can think of. They design and build the reactors used to make these materials and invent the processes used to separate and purify the products. They develop waste disposal processes and have a leading role in today's environmental protection research. Chemical engineers are involved in all facets of biotechnology, from research on artificial kidneys to the design and control of biofermentation reactors. Chemical engineers devised the processes needed to produce the special plastics used for artificial joints and developed the membranes used for skin grafts on severely burned patients. They are doing research and development on recombinant DNA technology and designing habitats for NASA space stations. Chemical engineers help design and build nuclear power plants. They helped develop the microlithography processes used to make computer chips

and built the plants where plastics used for compact discs are produced.

The ability to work in such diverse fields requires unusually extensive cross-disciplinary training. The Chemical Engineering degree requires students to develop proficiency in science, mathematics, and biological science as adjuncts to mastering chemical engineering course material on mass and energy balances, unit operations, transport phenomena, thermodynamics, reaction engineering, process control, and process design and economics. Additionally, Chemical Engineering majors are expected to develop considerable written and verbal expertise so additional emphasis is placed on learning composition and rhetoric skill.

Freshman Year in Chemical Engineering

Fall Semester

		Credits
CHE 101	General Chemistry	4
CHE L101	General Chemistry Laboratory	1
MAT 200	Calculus with Analytic Geometry	4
ENG 101	Composition and Rhetoric	3
EGR 101	Introduction to Engineering	4
		16

Spring Semester

CHE 102	General Chemistry	4
CHE L102	General Chemistry Laboratory	1
MAT 201	Calculus with Analytic Geometry	4
PHY 207	University Physics	5
EGR 102	Engineering Concepts	4
		18

Sophomore Year in Chemical Engineering

Fall Semester

CHE 301	Organic Chemistry I	3
CHE L301	Organic Chemistry Laboratory I	2
CRE 201	Material, Energy and Economic Balances	3
MAT 301	Differential Equations	3
PHY 208	University Physics	5
		16

Spring Semester

CHE 302	Organic Chemistry II	3
CRE 310	Chemical, Biochemical and Transport Systems Laboratory I (organic)	2
CRE 202	Separation Processes	3
ENG 200	Composition and Rhetoric	3
General Education Requirements		6
		17

Junior Year in Chemical Engineering

Fall Semester

EGR 301	Transport Phenomena I (Fluid Mechanics)	3
EGR 304	Thermodynamics	3
EGR 305	Sensors/Measurements	3
CRE 320	Chemical, Biochemical and Transport Systems Laboratory II (sensors)	1
STA 541	Applied Statistics	3
General Education Requirement		3
		16

Spring Semester

CRE 312	Chemical Reaction Engineering	3
EGR 302	Transport Phenomena II (Heat/Mass Transfer)	3
MCE 308	Automatic Controls	3

CRE 330	Chemical,Biochemical and Transport Systems Laboratory III (inorganic)	2
CHE 406	Inorganic Chemistry	3
	General Education Requirement	3
		17

Summer

The summer between the junior and senior years is devoted to either a full-time University, industrial manufacturing floor, or industrial research laboratory practicum. This summer experience is intended to be intense and to have a major component of "hands-on" practice of engineering which will bring the life of "real-world" engineering practice to the classroom.

EGR 410	Engineering Laboratory/Manufacturing Practicum	3
---------	------------------------------------------------	---

Senior Year in Chemical Engineering**Fall Semester**

EGR 402	Senior Design Studio I	3
	General Education Requirements	6
	Technical Electives	6
		15

Spring Semester

EGR 403	Senior Design Studio II	3
	Technical Electives	6
	General Education Requirement	3
		12

TOTAL MINIMUM REQUIREMENT **130**

Chemical Engineering students must select a total of four technical electives from the four lists of courses that follow. Students must take BIO 206 before taking a course in biomedical engineering.

Technical Electives

	<i>Credits</i>	
Biosciences/Biotechnology		
BIC 503	Biochemistry, Cell and Molecular Biology	5
BIC 504	Biochemistry, Cell and Molecular Biology	5
BIC 505,506	Experimental Biochemistry	2
Biomedical Engineering		
BIO 206	Human Physiology	3
BME 310	Biomechanics	3
BME 307	Bioinstrumentation	3
BME 427	Biomaterials	3
BME 406	Artificial Organs	3
Polymer Science/Materials Science and Engineering		
CHE 550	Introduction to Polymer Chemistry	3
MCE 428	Polymer Processing	3
CHE 580	Mechanical Properties of Plastics and Polymers	3
CHE 491	Topics in Chemistry	3
BIC 602	Physical Properties of Macromolecules	3
Manufacturing		
MCE 425	Introduction to Manufacturing Systems	3
MCE 426	Manufacturing Processes	3
MCE 428	Polymer Processing	3

In lieu of the preceding four technical electives, chemical engineering majors may select a minor in business, chemistry, mathematical sciences, biology, electrical engineering, mechanical engineering, or one of the following programs/options. However, this may require more than 130 credits in order to fulfill both the

requirements for the baccalaureate degree in chemical engineering and those of the minor or program/option selected below:

Pre-Medicine/Dentistry Option

BIO 206	Human Physiology	3
BIO 218	Cell Biology	3
BIO 151,152	Introduction to Biological Sciences	3, 3
BIO L151,L152	Introduction to Biological Sciences Laboratory	1, 1

Chemical Engineering BS Degree and MBA in Five Years**Undergraduate Program**

ECO 210,211	Principles of Economics	3, 3
BUS 205	Introductory Accounting Survey	3
BUS 308	Introduction to Marketing	3
BUS 311	Financial Management	3
BUS 319	Organizational Behavior	3
BUS 323	Legal Environment of Business	3
BUS 360	Business Information Systems	3

MBA Graduate Program

ECO 610	Managerial Economics	3
BUS 608	Managerial Accounting Concepts	3
BUS 621	Topics in Economics	3
BUS 641	Organizational Behavior	3
BUS 642	Business Policy	3
BUS 645	Operations Research	3
BUS 661	Management Information Systems	3
BUS 671	Marketing Management	3
MBA Electives (2)		6

Courses in Chemical Engineering

CRE 201 Material, Energy, and Economic Balances. Semester course;3 lecture hours. 3 credits. Prerequisites:EGR 102,CHE 101,and CHE 102.An introductory chemical engineering course covering material and energy balances with attention given to economic aspects of chemical processes.

CRE 202 Separation Processes. Semester course;3 lecture hours. 3 credits. Prerequisites: CRE 201.The course focuses on methods of separating reaction mixtures and multicomponent systems in the chemical and biotech industries.

CRE 310 Chemical, Biochemical, and Transport Systems Laboratory I. Semester course; 2 laboratory periods. 2 credits. Prerequisites: CRE 201, CHE 301 and CHE 301L; CRE 202 and CHE 302 are to be taken concurrently. The first of a three-part laboratory sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on the synthesis, separation and purification of organic compounds.

CRE 312 Chemical Reaction Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: CRE 201, 202, 310 and 320, and EGR 301 and 304;EGR 302 is to be taken concurrently. The course discusses homogeneous and heterogeneous reaction kinetics, batch vs. continuous processes and reactor design for each, catalysis, and bioreactors. Environmentally benign chemical processes and safety issues will be incorporated throughout the course.

CRE 320 Chemical, Biochemical and Transport Systems Laboratory II. Semester course; 1 laboratory period. 1 credit. Prerequisites: CRE 201, 202 and 310; to be taken concurrently with EGR 301 and 307.The second of a three-part laboratory sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on the measurement of selected process parameters (pressure drop, temperature and temperature gradients, time-varying concentrations) and the working and construction of selected sensors.

CRE 330 Chemical, Biochemical and Transport Systems Laboratory III. Semester course; 2 laboratory periods. 2 credits. Prerequisites: CRE 201, 202, 310, 320, and EGR 301 and 304; to be taken concurrently with CHE 406 (inorganic Chemistry). The final of a three-part sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on industrial inorganic chemistry, and builds on concepts and operations introduced in CRE 310 and 320.

Electrical Engineering Program

Robert J. Mattauch

Associate Dean for Administration, Commonwealth Professor and Chair, Electrical Engineering Program (1996) BS 1962 Carnegie Institute of Technology; ME 1963 and PhD 1967 North Carolina State University

- Baski, Alison A. (1996) *Assistant Professor of Electrical Engineering and Physics* BS 1987 University of Colorado; MS 1990 and PhD 1991 Stanford University
- Carlisle, John A. (1996) *Assistant Professor of Electrical Engineering and Physics* BS 1986 and MS 1988 East Texas State University; PhD 1993 University of Illinois
- Chatterji, Anil (1977) *Assistant Professor and Director of Computing Services, School of Engineering* MS 1978 Virginia Polytechnic Institute and State University
- Cregger, Barton B. (1998) *Deputy Chair of the Electrical Engineering Program and Assistant Professor* BS 1980 and MS 1982 University of Virginia
- Hobson, Rosalyn S. (1996) *Assistant Professor* BS 1991, MS 1995 and PhD 1997 University of Virginia
- Morkoc, Hadis (1997) *Founders Professor of Electrical Engineering and Professor of Physics* BS 1968 and MS 1969 Istanbul Technical University; PhD 1975 Cornell University
- Pearson, Robert E. (1997) *Associate Professor* BSEE 1981 and MSEE 1986 Rochester Institute of Technology; PhD 1995 State University of New York, Buffalo
- Price, Ronnie J. (1997) *Affiliate Assistant Professor* BS 1984 Clinch Valley College, MPA 1991 University of Virginia
- Sweeney, William R. (1997) *Adjunct Assistant Professor* BSEE 1978 Virginia Polytechnic Institute and State University
- Tait, Gregory B. (1996) *Associate Professor of Electrical Engineering and Physics* BS 1982 Amherst College, MS 1984 University of Maryland; PhD 1992 Johns Hopkins University

The profession of electrical engineering touches all aspects of our lives in that electrical engineers design and fabricate devices and systems critical in applications such as computing, communications, health care, manufacturing and automation, power generation and utilization, transportation, and entertainment. An element very important to these and many other applications is the microelectronic device or system.

In the sub-area of microelectronics, electrical engineers design and fabricate electronic materials such as semiconductors, conductors, and superconductors used in the manufacture of electronic devices. As a natural progression, electrical engineers design and fabricate electronic devices such as transistors, which control or modulate the flow of energy; sensors of light, mechanical force, chemicals, etc.; electromagnetic radiation sources such as lasers, light emitting diodes, and microwave power sources. Following this progression, we find electrical engineers designing and fabricating integrated circuits such as microprocessors, and memory elements; flat panel displays, etc., which are found in applications ranging from supercomputers to watches, clocks, and toys. Further in this progression we find electrical engineers designing and fabricating today's and tomorrow's computers.

Computer systems and Applications Specific Integrated Circuits, ASICs, are the elements which enable the existence of today's communication systems such as the Internet, satellite systems, telemedicine, wired and wireless (cellular) telephones, along with standard and high definition television. In addition, they, along with sensors, microwave power sources, and actuators, permit our present and future automated manufacturing lines, air and traffic control systems, and automotive safety and traffic control through collision avoidance radar systems, antilocking brake systems (ABS), air bag actuators, automatic traffic routing and the "smart highway" of the future.

In addition, electrical engineers play an ever increasing role in the design and building of major facets of today's and tomorrow's health care systems and medical research through the application of microelectronic instrumentation and diagnostic tools such as MRI and CATSCAN systems. The field of electrical engineering truly permeates every facet of our lives and thus provides excellent employment opportunities to the general practitioner or the specialist in over 35 different sub specialties.

The curriculum of the Electrical Engineering Program provides a strong foundation in the fundamentals of the profession including engineering problem solving, breadth in the major facets of the profession, and the opportunity to specialize in today's critical areas of communication systems, and microelectronics. Graduates of this program will be well prepared for constant technological change and growth through lifelong learning.

Freshman Year in Electrical Engineering

	<i>Credits</i>
Fall Semester	
CHE 101 General Chemistry	4
CHE L101 General Chemistry Laboratory	1
MAT 200 Calculus with Analytic Geometry	4
ENG 101 Composition and Rhetoric I	3
EGR 101 Introduction to Engineering	4
	16

Spring Semester

MAT 201 Calculus with Analytic Geometry	4
PHY 207 University Physics	5
EGR 102 Engineering Concepts	4
General Education Requirement	3
	16

Sophomore Year in Electrical Engineering

Fall Semester

PHY 208 University Physics	5
MAT 301 Differential Equations	3
ELE 206 Electric Circuits	3
CSC 255 Structured Programming	3
General Education Requirement	3
	17

Spring Semester

MAT 307 Multivariate Calculus	3
ELE 224 Introduction to Microelectronics	4
ELE 254 Digital Logic Design	3
ENG 200 Composition and Rhetoric	3
General Education Requirement	3
	16

Junior Year in Electrical Engineering**Fall Semester**

ELE 307	Integrated Circuits	4
ELE 309	EM Fields	3
ELE 303	Electronic Devices	3
ELE 335	Signals and Systems	3
General Education Requirement		3
		16

Spring Semester

ELE 336	Introduction to Communication	3
STA 541	Applied Statistics for Engineers and Scientists	3
ELE 310	Microwave and Photonic Engineering	3
ELE 364	Microcomputers	3
General Education Requirements		6
		18

Summer between Junior and Senior Years

EGR 410	Engineering Laboratory/Manufacturing Practicum	1-3
---------	------------------------------------------------	-----

The summer between the junior and senior years is devoted to either a full-time University, industrial manufacturing floor, or industrial research laboratory practicum. This summer experience is intended to be intense and to have a major component of "hands-on" practice of engineering which will bring the life of "real-world" engineering practice to the classroom.

Senior Year in Electrical Engineering**Fall Semester**

EGR 402	Senior Design Studio I	3
Technical Elective with Laboratory		4
Technical Elective		3
General Education Requirement		3
SPE 321 or BUS 325 (oral communications)		3
		16

Spring Semester

EGR 403	Senior Design Studio II	3
Technical Elective*		6-8
General Education Requirement		3
		12

MINIMUM TOTAL REQUIREMENT 130

* Senior Year Electives – Of the four electrical engineering elective courses existing in the senior year, each student must take at least two courses, one with an associated laboratory, from one concentration area, and at least one course from another concentration area. Examples of these elective courses in specific concentration areas are shown in the following tables.

Computer Engineering

ELE 426	Computer Organization and Design	4
ELE 427	Advanced Digital Design	3
ELE 429	VLSI Design	4

Microelectronics

ELE 435	VLSI Fabrication and Laboratory	4
---------	---------------------------------	---

Communication Systems

ELE 444	Communication Systems	4
ELE 445	Digital Signal Processing	3
ELE 454	Automatic Control	3
ELE 455	State Variables and Control Systems	3

OPTIONS

Students in the Electrical Engineering Program may concentrate in one of the following programs/options. This may, however, require more

than 130 credit hours in order to fulfill the requirements for both the baccalaureate degree in electrical engineering and those of the program/option listed below.

Pre-Medicine/Dentistry

CHE 102	General Chemistry	4
CHE L102	General Chemistry Laboratory	1
CHE 301-302	Organic Chemistry	3-3
CHE L301	Organic Chemistry Laboratory	2
BIO 151,152	Introduction to Biological Sciences	3, 3
BIO L151,L152	Introduction to Biological Sciences Laboratory	1, 1
BIO 206	Human Physiology	3
BIO 218	Cell Biology	3

Business Minor

(see Part XI, "Minor in General Business," for additional requirements)

ECO 203	Introduction to Economics	3
BUS 202	Accounting for Nonbusiness Majors	3
BUS 308	Introduction to Marketing	3
BUS 311	Financial Management	3
BUS 319	Organizational Behavior	3
BUS 323	Legal Environment in Business	3
BUS 360	Business Information Systems	3

MBA and Engineering Degree in Five Years**Undergraduate Program**

ECO 210,211	Principles of Economics	3, 3
BUS 205	Introductory Accounting Survey	3
BUS 308	Introduction to Marketing	3
BUS 311	Financial Management	3
BUS 319	Organizational Behavior	3
BUS 323	Legal Environment in Business	3
BUS 360	Business Information Systems	3

MBA Graduate Program

ECO 610	Managerial Economics	3
BUS 608	Managerial Accounting Concepts	3
BUS 621	Topics in Economics	3
BUS 641	Organizational Behavior	3
BUS 642	Business Policy	3
BUS 645	Operations Research	3
BUS 661	Management Information Systems	3
BUS 671	Marketing Management	3
MBA Electives		2

Courses in Electrical Engineering

ELE 206 Electric Circuits. Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: EGR 101. Corequisites: MAT 301 or consent of chair. An introduction to electrical circuit theory and its application to practical direct and alternating current circuits. Topics include: Kirchhoff's Laws (review from EGR 101), fundamental principles of network theorems, transient and steady-state response of RC, RL, and RLC circuits by classical and Laplace transform methods, time-domain and frequency-domain relationships, phasor analysis and power. Laboratory work, practical applications and classroom demonstrations emphasize and illustrate the fundamentals presented in this course.

ELE 224 Introduction to Microelectronics. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: ELE 206, and MAT 301. Modeling, analysis, design, and measurement of electrical circuits which contain electronic devices. Topics include: electrical behavior of basic discrete devices including p-n junction diodes, bipolar junction and field-effect transistors along with integrated circuit concepts, and operational amplifiers. Treated will be concepts of input and output impedances, amplification, frequency response, and circuit topologies. Students will learn to design-to-specification through laboratory problems, a design project, and circuit simulation using SPICE computer software.

ELE 254 Digital Logic Design. Semester course; 3 lecture and 2 laboratory hours. 3 credits. Prerequisites: ELE 206 and MAT 201. Corequisites: ELE 224. An introduction to digital logic design with an emphasis on practical design techniques and circuit implementations.

Topics include number representation in digital computers, Boolean algebra, theory of logic functions, mapping techniques and function minimization, design of combinational, clock sequential, and interactive digital circuits such as comparators, counters, pattern detectors, adders and subtractors. Asynchronous sequential circuit concepts are introduced. Students will use the above basic skills in laboratory to design and fabricate a digital logic circuit.

ELE 303 Electronic Devices. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 224 and MAT 301. An introduction to solid state electronic devices which will take students from their understanding of basic quantum mechanical principles through the fundamentals of atomic structure, band theory, charge transport in solids, and terminal electrical characteristics of semiconductor devices including p-n junction and Schottky diodes, bipolar junction and insulated gate field-effect transistors.

ELE 307 Integrated Circuits. Semester course; 2 lecture hours and 3 laboratory hours. 4 credits. Prerequisites: ELE 224 of consent of chair. Modeling, analysis, design, and measurement of advanced analog and digital integrated circuits. Operational amplifier circuit topology is used as a means of introducing and studying input, gain, level shift, and output stages. Analog differential amplifiers, feedback and high-frequency response will be emphasized. DC models of field effect transistors (MOSFETs) are utilized to study the operation of digital very large scale integrated (VLSI) circuits such as flip-flop, and memory circuit topologies. Circuit design and fabrication techniques are explored for mixed analog-digital circuits. This course provides the opportunity for layout and fabrication of an integrated circuit chip, using advanced simulation and layout software tools. Intensive computer-aided design and laboratory experience forms the core of this course, including a significant design project.

ELE 309 Electromagnetic Fields. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and MAT 307 or consent of chair. Fundamentals of engineering electromagnetics, including electrostatics, magnetostatics, electrodynamics, and conditions which permit the use of circuit theory. Analysis and understanding of the phenomena associated with electric and magnetic fields. Wave dynamical solutions of Maxwell's equations that will include: reflection and transmission in dielectric materials, waveguiding and transmission structures, and radiation from antennas. Computer simulation techniques such as finite-difference time-domain solutions of propagating waves will reinforce lecture material. Practical engineering applications will be investigated in a wave propagating laboratory exercise.

ELE 310 Microwave and Photonic Engineering. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 309. Wireless and optical communications applications of electromagnetic fields. Theory of microwave transmission line and waveguiding structures including impedance transformation and matching. Scattering parameters and techniques of low-noise microwave amplifier design, essential concepts from geometrical and physical optics and the interaction of photons with materials will be studied. Operating principles and design considerations of photoemitters (lasers and LEDs), photodetectors, and optical fiber are considered.

ELE 335 Signals and Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 206 and MAT 301. The concept of linear continuous-time and discrete-time systems, their classification, analysis, and design using mathematical models will be treated. Topics to be covered are: linear systems concept and classification, continuous-time linear systems differential equations, Laplace transforms and their application, z-transforms and their application, phasers, and Fourier series, and Fourier transforms.

ELE 336 Introduction to Communication. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 335 and MAT 307. Theory of expanding into analog communication systems with an emphasis on signal design and modulation. Mathematical principles on which systems are based are presented throughout the course. Examples of current communication systems are employed to aid students in understanding application of mathematical principles to real world systems.

ELE 364 Microcomputer Systems. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: ELE 254 and CSC 255. Basic

computer organization, microprocessor instruction sets, assembly language programming, the design of various types of digital as well as analog interfaces and microprocessor system design considerations will be treated. The laboratory is designed to provide practical, hands-on experience with microprocessor software applications and interfacing techniques.

ELE 426 Computer Organization and Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 364. This course presents the foundation for computer design at the register transfer level. Starting from an instruction set architecture, students design a data path and a control unit to implement the architecture. Topics considered are hardware description language, computer components and structures, processing algorithm, data path, controller, data representation, interrupt system protocol, memory structures, interfacing, and high performance computing.

ELE 427 Advanced Digital Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 426. This course provides students with practical foundations for the design of digital systems. It expands on the digital system design theory learned in prerequisite courses. Students will implement a version of the computer they designed in ELE 426. Topics covered are: top-down design and design methodology, logic decomposition, design synthesis, application-specific IC design, logic families and high-speed interfacing, asynchronous sequential machine design, hazard analysis and detection, digital testing and design for testability, and logic debugging and testing.

ELE 429 VLSI Design. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: ELE 303 and ELE 307. This course will have students (1) design and capture schematically a combinational circuit, a sequential circuit, and a finite state machine, (2) simulate the resulting circuit to verify functionally its timing requirements ability, (3) layout a custom circuit that implements the schematic circuit diagram and passes all design rules, and (4) have the ability to discuss on various levels the interactions between devices, processes, and the design process.

ELE 435 Fabrication and Laboratory. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: ELE 303. This course will have students (1) become introduced to the fabrication of integrated circuits, (2) design individual devices and simulate their operation, (3) design and simulate a fabrication process to build the device designed in part 2, (4) carry out the necessary processing to produce an array of individual metal gate pMOS transistors on a silicon substrate, (5) carry out a metallization process to connect these devices into an integrated circuit, (6) characterize the electrical behavior introduced to failure analysis by using standard tools to determine the reason for failure and expected device/circuit operation.

ELE 444 Communication Systems. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: ELE 336. Design and analysis of analog and digital communication systems, pulse modulation, information and digital transmission, digital modulation, information theory, and coding will be treated. Emphasis is placed on the student gaining an appreciation for and an understanding of the role of optimization and trade-offs by considering bandwidth requirements, signal-to-noise ratio limitations, complexity and cost of analog and digital communication systems.

ELE 445 Digital Signal Processing. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 336. Digital signal processing theory and algorithms including sampling theorems, transform analysis and filter design techniques. Discrete-time signals and systems, sampling of continuous time signals, the z transform, transform analysis of linear time-invariant systems, structures for discrete-time systems, and filter design techniques will be treated.

ELE 454 Automatic Control. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 336. This course covers the design and analysis of linear feedback systems. Emphasis is placed on the student gaining mathematical modeling experience and performing sensitivity and stability analysis. The use of design compensators to meet design specifications will be treated. Topics covered will be: an overview and brief history of feedback control, dynamic models, dynamic response, basic properties of feedback, root-locus, and frequency response design methods.

ELE 455 State Variables and Control Systems. Semester course; 3 lecture hours. 3 credits. Prerequisites: ELE 454. The use of state space methods to model digital and linear systems. Emphasis is placed on the student gaining mathematical modeling experience and performing sensitivity and stability analysis. Topics treated will be: review of root-locus and frequency design methods, linear algebraic equations, state variable equations and state-space design, digital control systems design: principles and case studies.

ELE 491 Special Topics. Semester course; 3 lecture hours. 3 credits. Maximum of 3 credits applicable toward electrical engineering major requirement. Advanced study of a selected topic in electrical engineering. See *Schedule of Classes* for specific topic to be offered and for prerequisites.

Mechanical Engineering Program

Eric Sandgren

Professor and Chair, Mechanical Engineering Program (1997)
BSME 1973, MSME 1974, and PhD 1977 Purdue University

Finto, Kevin J. (1997) *Adjunct Assistant Professor* BSME 1981 Northwestern University; MBA 1985 and JD 1985 University of Texas

Haas, Thomas W. (1983) *Associate Dean for Academic and Faculty Affairs, Director, Commonwealth Graduate Engineering Program and Professor of Mechanical Engineering* BS 1961 State University of New York, Buffalo; MS 1962 Pennsylvania State University; MA 1965 and PhD 1968 Princeton University

Heinz, Robert A. (1997) *Associate Dean for Industrial Affairs and Professor of Mechanical Engineering* BS 1965 and MS 1966 Lehigh University; PhD 1971 Carnegie Mellon University

Palmer, Mark A. (1997) *Assistant Professor* BS 1987 and PhD 1995 Rensselaer Polytechnic Institute

Mechanical engineers are the general practitioners of the engineering profession. They play a dominant role in a variety of industries, including transportation, power generation, heating and air conditioning, agricultural and process machinery, consumer products and a variety of precision engineering enterprises such as optics, prosthetic devices, instruments, and the like. In addition to research, design and development work for specific products, mechanical engineers are often responsible for developing and operating the machines for producing, assembling, packaging, and warehousing products. As a result, they are often involved with automated production facilities including machine tools and robots. Mechanical engineering, being the broadest of the engineering disciplines, provides opportunities for employment in industry, business, government, research and education.

The curriculum in Mechanical Engineering provides a broad, fundamental education preparing the student for direct entry into industry as well as further professional study. The first part of the curriculum places emphasis on mathematics, physics and chemistry. With this background, the fundamental mechanical engineering subjects are studied.

Freshman Year in Mechanical Engineering

	<i>Credits</i>
Fall Semester	
CHE 101 General Chemistry	4
CHE L101 General Chemistry Laboratory	1
MAT 200 Calculus with Analytic Geometry	4
ENG 101 Composition and Rhetoric	3
EGR 101 Introduction to Engineering	4

16

Spring Semester

CHE 102 General Chemistry	4
CHE L102 General Chemistry Laboratory	1
MAT 201 Calculus with Analytic Geometry	4
PHY 207 University Physics	5
EGR 102 Engineering Concepts	4

18

Sophomore Year in Mechanical Engineering

Fall Semester

PHY 208 University Physics	5
MAT 301 Differential Equations	3
MCE 201 Dynamics and Kinematics	3
General Education Requirement	3

14

Spring Semester

MCE 202 Mechanics of Deformables	3
ENG 200 Composition and Rhetoric	3
MAT 307 Multivariate Calculus	3
ELE 206 Electric Circuits	3
General Education Requirements	6

18

Junior Year in Mechanical Engineering

Fall Semester

EGR 301 Transport Phenomena I (fluid mechanics)	3
EGR 304 Thermodynamics	3
EGR 305 Sensors/Measurements	3
MCE 300 Mechanical Systems Design	3
MCE 420 CAE Design	3
General Education Requirement	3

18

Spring Semester

EGR 302 Transport Phenomena II (heat and mass transfer)	3
STA 541 Applied Statistics	3
MCE 308 Automatic Controls	3
MCE 303 Thermal Systems Design	3
General Education Requirement	3

15

Summer

The summer between the junior and senior years is devoted to either a full-time University, industrial manufacturing floor, or industrial research laboratory practicum. This summer experience is intended to be intense and to have a major component of "hands-on" practice of engineering which will bring the life of "real-world" engineering practice to the classroom.

EGR 410 Laboratory/Manufacturing Practicum	1
--------------------------------------------	---

Senior Year in Mechanical Engineering

Fall Semester

EGR 402 Senior Design Studio I	3
MCE 410 Mechanical Engineering Laboratory	3
MCE 421 CAE Design	3
General Education Requirement	3
Technical Electives	6

18

Spring Semester

EGR 403 Senior Design Studio II	3
General Education Requirement	3
Technical Electives	6

12

MINIMUM TOTAL REQUIREMENT

130

Mechanical Engineering students must select a total of four technical electives from the three lists of courses below. Students must take BIO 206 before taking a course in biomedical engineering.

Technical Electives

Mechanical Design

MCE 435	Design for Manufacturing and Assembly	3
MCE 436	Engineering Materials	3
MCE 437	Principles of Polymer Engineering	3
MCE 438	Tribology	3

Manufacturing

MCE 425	Introduction to Manufacturing Systems	3
MCE 426	Manufacturing Processes	3
MCE 427	Robotics	3
MCE 428	Polymer Processing	3

Biomedical Engineering

BIO 206	Human Physiology	3
BME 310	Biomechanics	3
BME 307	Bioinstrumentation	3
BME 406	Artificial Organs	3
BME 427	Biomaterials	3

In lieu of the above technical electives, Mechanical Engineering majors may select a minor in business, physics, mathematical sciences, physiology, electrical engineering, or chemical engineering or one of the following programs/options. However, this may require more than 130 credits in order to fulfill both the requirements for the baccalaureate degree in mechanical engineering and those of the minor or program/option selected below:

Pre-Medicine/Dentistry Option

CHE 301-302	Organic Chemistry	3-3
BIO 151,152	Introduction to Biological Sciences	3, 3
BIO L151,L152	Introduction to Biological Sciences Laboratory	1, 1
BIO 218	Cell Biology	3

One additional upper level course is to be selected with the approval of an adviser

Mechanical Engineering BS Degree and MBA in Five Years

Undergraduate Program

ECO 210,211	Principles of Economics	3, 3
BUS 205	Introductory Accounting Survey	3
BUS 308	Introduction to Marketing	3
BUS 311	Financial Management	3
BUS 319	Organizational Behavior	3
BUS 323	Legal Environment of Business	3
BUS 360	Business Information Systems	3

MBA Graduate Program

ECO 610	Managerial Economics	3
BUS 608	Managerial Accounting Concepts	3
BUS 621	Topics in Economics	3
BUS 641	Organizational Behavior	3
BUS 642	Business Policy	3
BUS 645	Operations Research	3
BUS 661	Management Information Systems	3
BUS 671	Marketing Management	3
MBA Electives (2)		6

Courses in Mechanical Engineering

MCE 201 Dynamics and Kinematics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 207. Corequisite: MAT 201.

Kinematics and kinetics of particles. Kinematics of rigid bodies; translation and fixed-axis rotation relative to translating axes, general planar motion, fixed-point rotation, general motion. Kinetics of rigid bodies:center of mass, mass movement of inertia, product of inertia, principal-axes, parallel-axes theorems. Planar motion,work-energy method. Design of cams, gears, and linkages.

MCE 202 Mechanics of Deformables. Semester course; 3 lecture hours. 3 credits. Prerequisites: EGR 102, MAT 200-201.An introductory course covering the mechanics of deformable solids. Subjects include stress, strain and constitutive relations; bending of beams; torsion; shearing; deflection of beams; column buckling; fatigue; failure theory; analysis and design of bar-type members.

MCE 300 Mechanical Systems Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: MCE 201, MCE 202, MAT 301, or permission of the instructor. Basic principles of applied mechanics and materials employed for the design of machine elements and mechanical systems; state of stress, deformation, and failure criterion is applied to bearings, brakes, clutches, belt drives, gears, chains, springs, gear trains, power screws and transmissions.

MCE 303 Thermal Systems Design. Semester course; 3 lecture hours. 3 credits. Prerequisites:MAT 301,EGR 301,and EGR 304 or permission of the instructor. Fundamentals of heat transfer, thermodynamics, and fluid mechanics applied to the analysis, design, selection and application of energy conversion systems.

MCE 308 Automatic Controls. Semester course;3 lecture and 1 laboratory hour. 3 credits. Prerequisites:PHY 207,MAT 301,EGR 102, or permission of the instructor. Mathematical modeling of automatic control systems; transfer functions, stability theory; open-loop and closed-loop control;Bode plots;application to control system design.

MCE 410 Mechanical Engineering Laboratory. Semester course; 2 lecture hours and 3 laboratory hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Operation and control of process equipment and mechanical machinery for the determination of operating characteristics; design of experiments, analysis of results, written and oral presentation of reports.

MCE 420 CAE Design. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Fundamentals of geometric modeling and graphics theory;basic structure of commercial CAD/CAM systems;design and manufacturing applications.

MCE 421 CAE Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Application of computer-based techniques to the analysis of mechanical devices and systems; computer graphics; finite element analysis;application to design.

MCE 425 Introduction to Manufacturing Systems. Semester course;3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Basic principles of systems analysis and modeling applied to manufacturing processes and operations; numerical control, programmable controllers, flexible manufacturing systems, group technology, process planning and control,modeling and simulation of factory operations.

MCE 426 Manufacturing Processes. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Introduction to the operation and design of metal fabrication processes; analysis of metal casting, extrusion, rolling, forging, wire and rod drawing; review of metal removal and joining methods; economic and business considerations.

MCE 427 Robotics. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Introduction to the state of the art and technology of robotics and its applications for productivity gain in industry.

MCE 428 Polymer Processing. Semester course; 3 lecture hours. 3 credits. Prerequisites:EGR 301,EGR 302,or permission of the instructor. Basic principles of momentum and heat transfer applied to the

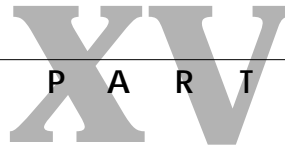
analysis of polymer processing operations; introduction to polymer rheology; operation and design aspects of extruders, blown film, injection molding, thermoforming, and compression molding machinery.

MCE 435 Design for Manufacturing and Assembly. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Methodologies used in the synthesis and analysis of product design in order to optimize manufacturing and assembly; relationship of design to the production processes, materials handling, assembly, finishing, quality and costs with emphasis on both formed and assembled products.

MCE 436 Engineering Materials. Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Materials properties and their modification as related to engineering properties and design; elastic and plastic stress-strain behavior of materials along with diffusion in solids, phase equilibria, and phase transformations; materials selection considerations include design, fabrication, mechanical failure, corrosion, service stability as well as compatibility and function in the human body.

MCE 437 Principles of Polymer Engineering. Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisite: MCE 202 or permission of the instructor. Basic principles of mechanics applied to the mechanical design and fabrication of polymers; introduction to polymer structure, rubber elasticity, and viscoelasticity; mechanical properties, plastic part design and plastic materials selection; fabrication processes.

MCE 438 Tribology. Semester course; 3 lecture hours. 3 credits. Prerequisites: MCE 202 or permission of the instructor. Basic principles of tribology applied to the friction, wear and design of mechanical systems; fundamentals of surface contact; friction theories and wear mechanisms; temperature considerations in sliding contacts; hydro-dynamic, hydrostatic, elastohydrodynamic, and boundary lubrication; materials selection and design.



School of Graduate Studies

Jack L. Haar

*Dean of Graduate Studies and Professor of Anatomy (1971) BS
1964 Capital University; MS 1966 University of Arizona; PhD
1970 Ohio State University*

Sherry T. Sandkam

*Associate Dean (1981) BA 1970 Longwood College; MBA 1986 and
PhD 1996 Virginia Commonwealth University*

Before enrolling in graduate courses, students should consult with a graduate program director in the discipline in which they intend to take courses. In some programs, credits for courses will not apply to a VCU graduate degree until the student has been admitted to a graduate degree program.

Degree-Seeking Graduate Students

For information about graduate study at VCU, see the *Graduate Bulletin* or contact the School of Graduate Studies at 901 West Franklin Street, Room B1, P.O. Box 843051, Richmond, VA 23284-3051, (804) 828-6916. The *Graduate Bulletin* is available for purchase at the VCU Bookstores, or may be accessed, in its entirety, via the Internet, at <http://www.vcu.edu/gradweb/>.

Nondegree-Seeking Graduate Students

A student who takes graduate courses without formal admission into a degree program is classified as a non-degree-seeking graduate student. Such students are required to verify residency and eligibility and obtain written permission from the school or schools in which they intend to take courses. Nondegree-seeking graduate students must hold a baccalaureate degree.

Enrollment in some graduate courses is limited to degree-seeking students or majors. In courses where enrollment is restricted, first priority is given to students admitted to the program, and then to other VCU graduate degree-seeking students. Nondegree-seeking students are not exempt from taking prerequisites for a course. There is no limit to the number of credits a non-degree-seeking student may take, as long as the student's academic performance is credible. However, a non-degree-seeking student who is later admitted as a degree-seeking student may apply only six hours earned as a nondegree-seeking student toward the degree. For information about admission as a nondegree-seeking student, contact the Graduate School at (804) 828-6916.

XVI

PART

School of Medicine

Hermes A. Kontos

Vice President for Health Sciences, Dean, School of Medicine, and Professor of Internal Medicine (1964) MD 1958 University of Athens, Greece; PhD 1967 Medical College of Virginia

Duke, Debra Ann (1994) *Instructor* MHA 1987 Medical College of Virginia of Virginia Commonwealth University

Heber H. Newsome

Professor of Surgery and Senior Associate Dean, School of Medicine (1970) BS 1958 Wake Forest University; MS 1962 and MD 1962 Tulane University

Jan F. Chlebowski

Professor of Biochemistry and Molecular Biophysics and Associate Dean for Graduate Education (1979) BA 1965 St. Mary's College; PhD 1969 Case Western Reserve University

Ralph R. Clark, III

Assistant Professor of Internal Medicine and Associate Dean for Clinical Activities (1990) BS 1983 College of William & Mary; MD 1987 Medical College of Virginia of Virginia Commonwealth University

William M. Gleason

Assistant Professor and Associate Dean for Administration (1980) AB 1969 University of North Carolina, Chapel Hill; MBA 1973 Indiana University

Goodwin, Margarette C. (1975) *Assistant Professor* BS 1980 Virginia Commonwealth University

Carol L. Hampton

Associate Professor and Associate Dean for Faculty and Instructional Development (1987) BA 1965 University of Arkansas; MMS 1969 Tulane University

Seago, Brenda L. (1989) *Assistant Professor* BA 1975 Augustana College; MA 1983 Virginia Polytechnic Institute and State University; MLS 1986 University of Maryland

Schlesinger, Jeanne B. (1992) *Assistant Professor* BS 1971 Tulsa University; MEd 1995 Virginia Commonwealth University

Cynthia M. Heldberg

Associate Professor and Associate Dean for Admissions (1986) BA 1965 Brown University; MA 1983 West Virginia College; PhD 1997 Virginia Commonwealth University

Edwards, Aileen A (1992) *Instructor* BGS 1991 Virginia Commonwealth University; MS 1997 Central Michigan University

Paul E. Mazmanian

Professor of Preventive Medicine and Community Health and Associate Dean for Continuing Medical Education (1978) BS 1972 Wayne State University; MA 1975 Michigan State University; PhD 1979 University of Michigan

Boothby, John R. (1983) *Assistant Professor* MSW 1977 Virginia Commonwealth University

James M. Messmer

Associate Professor of Radiology and Associate Dean for Medical Education (1981) BA 1968 Rockhurst College; MD 1972 St. Louis University; MA 1995 Virginia Commonwealth University

Deschenes, Jennifer L. (1995) *Instructor* BA 1991 University of Connecticut; MS 1995 Syracuse University

Kreutzer, Kathleen O'Kane (1984) *Assistant Professor* BA 1981 College of William & Mary; MEd 1991 Virginia Commonwealth University

Mary D. Nettleman

Associate Professor of Internal Medicine and Associate Dean for Primary Care (1996) BS 1977 Ohio University; MD 1981 Vanderbilt University; MS 1993 University of Iowa

Robert P. Perry

Associate Professor of Internal Medicine and Associate Dean for Graduate Medical Education (1979) AB 1972 Harvard University; MD 1976 University of Rochester

Karen Sanders

Associate Dean for McGuire Veterans Administration Medical Center Affairs

Hugo R. Seibel

Professor of Anatomy and Associate Dean for Student Activities (1967) BS 1960 Brooklyn College; PhD 1967 University of Rochester

Bates, Sean L. (1997) *Director for Financial Aid, School of Medicine* BS 1992 James Madison University; MS 1995 and MPH 1997 Virginia Commonwealth University

Donald M. Switz

Professor of Internal Medicine and Associate Dean for Ambulatory Care Activities for MCV Hospitals of Virginia Commonwealth University (1970) BA 1958 Carleton College; MD 1962 University of Chicago

The School of Medicine of the then Medical College of Virginia opened on November 5, 1838, as the medical department of Hampden-Sydney College.

Full-time clinical faculty members were first appointed in 1928, and improved facilities became available between 1936 and 1941 with completion of the 600-bed West Hospital, A. D. Williams Clinic, and Hunton Hall dormitory, which was located on the current site of the Main Hospital building. Growth in faculty, students, and facilities continued after World War II, leading to the development of today's academic health center.

Hospital facilities on the MCV Campus include both inpatient and outpatient facilities. MCV Hospitals of Virginia Commonwealth University is licensed for 902 beds. In addition, the hospital at the McGuire Veterans Affairs Medical Center (600 beds) provides excellent patient care, training, and research opportunities for the School of Medicine through its affiliation programs.

Basic health sciences historically have been an integral part of the curriculum of medicine, dentistry, pharmacy, nursing and allied health disciplines. In the earlier years of the University, the basic sciences departments were administered by the School of Medicine. Between 1966 and 1994, a separately established School of Basic Health Sciences administered the basic sciences departments, instruction in basic sciences for students in other health sciences programs, and selected graduate degree programs. By action of the University's Board of Visitors, the School of Basic Health Sciences was merged with the School of Medicine effective July 1, 1994.

General Information

The mission of the School of Medicine is constant improvement of the quality of health care for citizens of Virginia, using innovative, scholarly activity to create new knowledge, to provide better systems of medical education, and to develop more effective health care methods.

The School of Medicine shares the general objectives of Virginia Commonwealth University.

1. To maintain an environment of educational excellence that will attract students and faculty interested in an institution maintaining the highest academic standards.
2. To promote an educational atmosphere that will develop in students: (a) desire and interest in life-long learning, (b) intellectual curiosity, and (c) excellence in skills and knowledge required for the solution of problems of health and disease.
3. To provide standards of clinical practice and scientific investigation that will serve students as examples throughout their professional careers.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, including undergraduate medical students and graduate physician house officers, and continuing education directed towards the needs of practicing physicians. In the classroom, laboratory, clinic, and hospital, the faculty and students are brought together in teaching-learning experiences promoting scientific scholarship and personal growth in knowledge and professional skills.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of skills in health care leadership and patient care. Therefore, we share with teaching the interdependent and almost inseparable objectives of research and service.

Faculty and Facilities

The School of Medicine consists of 700 full-time faculty, including affiliates, assisted by 630 residents and fellows and over 700 clinical voluntary faculty. Programs of instruction and research are conducted on campus, at the McGuire Veterans Affairs Medical Center, and at affiliated hospitals in an effort to expose the student to the variety of clinical disorders encountered in the eastern United States. Those affiliated community hospitals beyond Richmond include Northampton-Accomack Hospital in Nassawadox, Johnston Memorial Hospital in Abingdon, Riverside Hospital in Newport News, Rappahannock General Hospital in Kilmarnock, and Radford Community Hospital in Radford.

Doctor of Medicine Program (MD)

Admissions

The School of Medicine participates in the American Medical College Application Service (AMCAS). The AMCAS application forms can be obtained from AMCAS, 2450 N. Street, N.W., Washington, D.C. 20037-1126. The application request forms are available from premedical advisers in all colleges and universities or from the Admissions Office of the School of Medicine, MCV Campus of Virginia Commonwealth University.

Application for the School of Medicine should be made on or after June 1 of the year preceding intended matriculation. The closing date for filing applications for this institution is November 15 of the year preceding the enrollment date. Priority for admissions is given to Virginia residents. Members of minority groups underrepresented in medicine are especially encouraged to apply to the School of Medicine. Students previously dismissed from a medical school will not be considered. All applicants must be U.S. citizens or permanent residents of the U.S. at the time of application.

A nonrefundable \$75 application fee and supplemental information, including faculty recommendations, will be required with all applications accepted for further consideration. The final date for returning supplemental information is December 1 of the year preceding possible enrollment in the School of Medicine.

The School of Medicine will not admit students from other health sciences schools at Virginia Commonwealth University until such students have completed the degree program for which they are enrolled.

The School of Medicine participates in the Early Decision Plan. This program permits an applicant to file a single application through AMCAS on or after June 1 but prior to August 1. All applicants filing under the Early Decision Plan will receive consideration for admission and a response on or before October 1. All applications for the Early Decision Plan must be supported by the results of the new MCAT test at the time the application is made.

The early notification date of this plan ensures that those who are unsuccessful have ample time to request further distribution of their applications to other medical schools. Further information on the Early Decision Plan is available with the AMCAS application.

Requirements for Entrance

The MCAT is required as part of the application. It is necessary that the test be taken no later than the fall of the year of application since selections will be complete before the spring test is given in the year of admission. This test is produced by the American College Testing Program, P.O. Box 414, Iowa City, Iowa 52240, and is administered in colleges and universities throughout the country. Information about the MCAT is available through premedical advisers or directly from the American College Testing Program.

Applicants may be admitted on the basis of 90 semester-hours of outstanding achievement; however, the majority of students admitted are completing their baccalaureate programs. The college major for premedical students should be selected in accordance with the individual student's aptitude and interest. The prerequisites for the School of Medicine have been reduced to a minimum in order to permit the widest possible latitude in preparation for medical education.

Prerequisites for admission include a minimum of 90 semester hours (or the equivalent) in a college or university accredited by the regional accrediting agency. This program of study must include a minimum of:

1. English – two semesters (one semester to include grammar and composition);
2. college mathematics – two semesters;
3. biological science (eight semester-hours), including laboratory experience. This may be satisfied by general biology, general zoology, or botany. No more than half may be botany;
4. general or introductory chemistry (eight semester-hours), including laboratory. An appropriate portion of this requirement may be met by courses in analytical chemistry or physical chemistry;
5. organic chemistry (six semester-hours), including laboratory. This course should be equivalent to and acceptable for continued studies in a chemistry major; and
6. general or introductory physics including laboratory experience (eight semester-hours).

Students are encouraged to pursue their own intellectual interests in college in order to obtain a broad education consistent with their major program. Courses in medically related science areas will not relieve the student of his/her responsibility for these subjects in the medical curriculum.

Selection Factors

Demonstrated academic skill and ability, as well as attributes of character and personality, are of significance to the Admissions Committee in the selection process. A review of academic achievement as represented by the standard academic record and summaries, MCAT scores, evaluations, and interviews are all sources of information on which the comparative evaluation process is based.

A review of the completed application file and interviews with members of the Admissions Committee are

an integral part of the procedure. The interview is an opportunity for the applicant to become acquainted with the institution, and it offers additional information for the selection process. Only on-campus interviews in Richmond are available.

Each year more applicants are interviewed than can be accepted in each class. Therefore, an interview is not an indication of acceptance to the School of Medicine.

Offers for admission are made, as previously indicated in the Early Decision Plan and on the uniform acceptance date of October 15, with admissions occurring thereafter until the class selections have been completed. The alternate list is constituted from selected and notified candidates at the time the class is filled. It is from this group of applicants that replacements are drawn for any vacancies which may occur in the selected class between that time and the third week of attendance.

Since selections are made in advance of actual attendance, all acceptances are made on condition of satisfactory completion of courses planned or in progress. It is expected that candidates will maintain acceptable standards of the department.

Students offered acceptance into a class are expected to respond within two weeks of the offer. If such a response presents a problem, extension of the time for the response should be requested. The enrollment of accepted candidates is considered complete only after payment of the \$100 deposit against the first tuition payment. This deposit will be returned to the candidate should withdrawal take place prior to May 15 of the year of attendance.

By the act of matriculating in the School of Medicine, the student accepts the responsibilities related to this opportunity and agrees that during the time that he/she is a registered student he/she will follow the rules and regulations established by the governing bodies of the School of Medicine and the University.

Transfer in Advanced Standing

Advanced standing admission is open only to students who have not previously been dismissed from any medical school and who are in good standing in LCME accredited American or Canadian medical schools. Transfers are only at the third year-level and are limited in number each year. Interested students should request information between January 1 and January 15 of the year they wish to transfer. Such individuals must pass Step I of the U.S. medical licensing examination prior to matriculation.

Application materials and further information may be obtained by writing to Admissions, School of Medicine, Virginia Commonwealth University, P.O. Box 980565, Richmond, VA 23298-0565.

U.S. citizens in foreign medical schools recognized by the World Health Organization may apply only for admission to the first-year class through AMCAS.

Curriculum

The program for the MD degree is divided into four phases, each of a year's duration. Medicine I, occupying the first year (late August to early June), emphasizes

normal human structure, function, growth, and development. Medicine II, occupying the second year (August to June), stresses the abnormal. Medicine III occupies the third year (July to July) and consists of clinical education and training. The fourth year (Medicine IV), lasting from August to mid-May, consists of approximately one-third required clinical education and training and approximately two-thirds electives at the Medical College of Virginia of VCU and at approved medical schools elsewhere in the USA and abroad. Elective opportunities are offered also in M-I and M-II.

Since 1995, School of Medicine students begin their clinical exposure in the first month of medical school in the Foundation of Clinical Medicine course. This longitudinal experience runs throughout the first two years and consists of one afternoon session per week in a private primary care physician's office alternating with one afternoon per week in a small group session. This new aspect of the curriculum gives the student the opportunity to learn the clinical relevance of basic science material and provides a fundamental understanding of the skills necessary for all clinical disciplines and to work with a primary care role model.

Registration in courses offered by the School of Medicine is restricted to students enrolled in the School of Medicine at the Medical College of Virginia of Virginia Commonwealth University.

Medicine I, II and III

The curriculum is viewed as a dynamic and evolving entity, and course titles, content, or duration of emphasis may be subject to modification for the sake of improving the learning experience.

Each course in M-I and M-II is designed and implemented by the faculty, and each year of the curriculum is supervised by a faculty coordinator. In M-III, a committee under a coordinator supervises the clinical experiences, and in M-IV there is an electives committee whose chair is the M-IV coordinator.

Medicine I

Course

Medical Biochemistry
Histology
Gross Anatomy
Physiology
Human Genetics
Pathogenesis
Behavioral Sciences
Population Medicine
Neurosciences
Foundations of Clinical Medicine
Immunology
Medical Ethics

Medicine II

Course

Medical Ethics
Microbiology
Preventive Medicine
Pharmacology
Hematology-Oncology
Gastrointestinal
Central Nervous System
Behavioral Sciences
Respiratory

Cardiovascular
Renal
Musculoskeletal-Dermatology
Endocrine
Women's Health
Foundation of Clinical Medicine

Medicine III

Rotation

Internal Medicine
Surgery
Pediatrics
Obstetrics-Gynecology
Psychiatry
Neurology
Community Practice
M-III Combined Workshop

Medicine IV

The School of Medicine, in an effort to best serve the needs and goals of the individual student, offers M-IV students the option of choosing electives during two-thirds of their senior year. The elective curriculum has been arranged primarily to allow those students who have definite goals to pursue them logically without adherence to a required curriculum. At the same time, it allows those who have not yet defined their goals an adequate assortment of electives with which to explore career options. Where standard elective choices seem too limiting, students are encouraged to approach individual faculty members relative to the development of unique courses that more closely approach individual needs. A member of the M-IV Committee is available to advise each student and to approve of each student's program.

The year is divided into nine four-week periods. The required rotations which must be served at the MCV Campus are an acting internship and completion of the "Update of Basic Sciences and Clinical Medicine" course. The first month of M-IV is divided into a two week vacation and a two week required Step II board review course.

A new electives catalog is published each year.

All students are required to take the United States Medical Licensing Examination Step I at the end of M-II and Step II in the fall of M-IV.

Graduate Medical Education

Clinical training leading to qualification for certification by the American specialty boards is offered in the following programs: general surgery, vascular surgery, thoracic surgery, urology, allergy and immunology, anesthesiology, clinical genetics, dermatology, dermatopathology, family practice, internal medicine, neurosurgery, neurology, child neurology, obstetrics/gynecology, ophthalmology, orthopedic surgery, otolaryngology, pathology, forensic pathology, neuropathology, pediatrics, pediatric cardiology, pediatric allergy and immunology, pediatric hematology and oncology, nuclear medicine, neonatal-perinatal medicine, physical medicine and rehabilitation, plastic surgery, psychiatry, diagnostic radiology, diagnostic radiology (nuclear), therapeutic radiology, oral surgery, public health, and preventive medicine.

Programs sponsoring a PGY-1 year (internship) are internal medicine, surgery, family practice, obstetrics/gyne-

ology, pathology, pediatrics, anesthesiology, psychiatry, diagnostic radiology, and neurology.

Requests for further information should be directed to the program of interest or the Associate Dean for Graduate Medical Education, School of Medicine, Virginia Commonwealth University, P.O. Box 980257, Richmond, VA 23298-0257.

Continuing Education

Mission Statement

The primary goal of the Office of Medical Education at the Medical College of Virginia of VCU is to provide continuing educational experiences specifically designed to enhance the delivery of high quality patient care by physicians and other health care professionals in Virginia and other states. The philosophy of continuing medical education is based on the belief that learning must be viewed as a lifelong process. In past generations, the graduating physician was able to look upon an acquired knowledge base as a reasonably stable resource for practicing medicine. However, today's rapidly expanding load of scientific information forces a continuing learning effort upon the physician. Undergraduate and graduate medical education alone can no longer offer reasonable assurance, if indeed they ever could, that practitioners are armed with the knowledge, attitudes, and skills that will enable them to render optimal, achievable patient care throughout their careers. Continuing education is now linked with undergraduate and graduate education to complete the continuum of medical education.

The goal and philosophy stated herein undergird and lend direction to the effort of the Office of Medical Education as it engages in a diversity of educational and education-related activities. Specifically, the Office of Medical Education works in concert with the faculty of the School of Medicine as well as other individuals and organizations as appropriate, to:

1. coordinate a state-wide continuing medical education program for several networks of affiliate hospitals;
2. organize the Virginia Hospital Television Network and provide continuing education programs for physicians and other health professionals directly into hospitals statewide, using satellite and audio-conferencing;
3. develop and deliver a series of short courses, clinical workshops, seminars, international medical study tours, and conferences for physicians and other health professionals;
4. provide clinical refresher courses and make readily available self-learning materials and methods;
5. conduct research to improve the process of continuing medical education; and
6. improve the education of the general public in the proper use of health care resources.

Fostering an appreciation for the concept of lifelong learning in undergraduate and graduate medical school programs is a challenge that is now being confronted by

medical schools throughout the nation. During these critical years, the attitudes of medical students toward continuing pursuits of learning are molded and developed. In order to encourage undergraduate and graduate students at VCU to embrace the concept of lifelong learning, the Office of Medical Education actively seeks their involvement in its various programs and activities. Brochures, posters, and a yearly catalogue are utilized to announce pending events.

Further information may be obtained by writing the Assistant Dean for Continuing Education, School of Medicine, Virginia Commonwealth University, P.O. Box 980048, Richmond, VA 23298-0048.

Office of Medical Alumni Relations

The Office of Medical Alumni Relations was established to develop and enhance the School of Medicine's interaction with its alumni. A School of Medicine newsletter, first published in 1987, provides a direct communication link between the school, its departments, and its alumni. All alumni are encouraged to keep the office informed of personal news for publication. The office and its staff are available to alumni for information, advocacy, and assistance in their contacts with the school and its departments. Staff also will coordinate the new Bed and Breakfast Program for students on residency interviews. Additional student/alumni opportunities will be developed.

The office welcomes ideas and suggestions from all alumni and students at any time. For further information, contact Director, Office of Medical Alumni Relations, School of Medicine, Virginia Commonwealth University, P.O. Box 980290, Richmond, VA 23298-0290; telephone (804) 225-3578.

Office of Development

The Office of Development was established to secure private philanthropic support for the School of Medicine. This office is responsible for the identification, cultivation, and solicitation of major gifts to the school from individuals, corporations, and foundations. The office works closely with the school's Office of Medical Alumni Relations, the MCV Hospitals' Office of Development of VCU, the Medical College of Virginia of VCU Foundation, and the University Advancement Office.

Gifts to the University may be restricted to the School of Medicine by making a gift to the Medical College of Virginia of VCU Foundation and designating it for any of the variety of purposes that fall within the scope of the school's activities. Gifts may be made out-right, pledged over a period of years, or made through any one of several planned gift mechanisms which allow for the return of income to the donor after the gift is made.

The Office of Development also helps coordinate several donor recognition events and assists in maintaining contact with past donors to the School of Medicine.

Further information may be obtained by writing to Director, Office of Development, School of Medicine, Virginia Commonwealth University, P.O. Box 980022, Richmond, Virginia 23298-0022, or by calling (804) 371-7451.

Annual Lectureships

The Department of Pediatrics sponsors annually a medical education program and the Sutton Lecture in honor of the late Dr. Lee E. Sutton, Jr., who was chair of the department from 1938 to 1958 and dean of the medical school from 1929 to 1942.

The annual Kinloch Nelson Medical Students Honors Day, sponsored by the American Medical Student Association and Alpha Omega Alpha, was designated as an expression of appreciation for the leadership Dr. Nelson provided during his tenure as dean of the School of Medicine from 1963 to 1971.

The Sanger Lecture was established and endowed by the late Dr. Harvey B. Haag, professor and chair of the Department of Pharmacology and dean of the School of Medicine from 1947 to 1951, as a tribute to Dr. William T. Sanger for his dedication and service to the institution. Dr. Sanger served as president of MCV from 1925 until 1956, chancellor from 1956 to 1959, and chancellor emeritus from 1959 until his death in 1975. The lectureship annually offers topics of current interest in the area of science and ethics to the University and the Richmond community.

The annual Charles W. Thomas Lectureship was begun in 1971 in honor of Dr. Thomas, whose bequest of one million dollars led to the establishment of the Charles W. Thomas Arthritis Research Unit for research and education in the area of arthritis, a disease from which he suffered. A graduate of the Medical College of Virginia, Class of 1903, Dr. Thomas was a native of Patrick County, Virginia, and practiced medicine in the state for over 50 years.

In 1973, former residents in obstetrics and gynecology from the Medical College of Virginia of Virginia Commonwealth University, through their organization, the H. Hudnall Ware, Jr., Society, established the H. Hudnall Ware, Jr., Visiting Professorship in honor of H. Hudnall Ware, Jr., MD, who was professor of obstetrics and gynecology from 1942 to 1967. The visiting professorship is combined with a two-day postgraduate continuing education program which provides information regarding recent advances in obstetrics and gynecology.

The John Hoover Moon Memorial Lectureship was established in 1972 as a tribute to John Hoover Moon, MD, professor of medicine, for his outstanding contribution to teaching and research. A graduate of the School of Medicine, 1949, he was the first clinical research fellow in the Division of Hematology. His research interests centered around the chemotherapy of malignant disease. The John Hoover Moon Memorial Foundation makes this annual lectureship possible.

The Carolyn and Howard McCue Lectureship was initiated September 22, 1987, to honor both of these physicians. The annual one-day lectureship alternates each year with pediatric and medical speakers. It is supported by gifts from family, residents, fellows, and friends through the Medical College of Virginia of VCU Foundation.

In recognition of long and brilliant service to the Medical College of Virginia, the Board of Visitors established the annual Stuart McGuire Lectureship on May 27, 1929. Dr. McGuire (1867-1948) served as professor of

surgery, dean, president, and chair of the Board of Visitors during his lifetime. The lecture series offers topics primarily in surgery.

The annual Stoneburner Lecture Series was initiated in 1946 in memory of Dr. Lewis T. Stoneburner, III, by his comrades in the 45th General Hospital, U.S. Army. Dr. Stoneburner graduated from MCV in 1937 and died in 1943 while serving his country as an army officer in North Africa. The lectures annually offer topics of current interest in medicine.

Combined MD and MS or PhD Programs

The School of Medicine encourages applications from individuals interested in the combined MD/PhD program. This program provides superior preparation for a career in academic medicine or medical research. The program has successfully trained independent medical research scientists and academicians.

Students interested in this combined degree program must be accepted by both the MD program and one of the PhD-granting programs within the School of Medicine. The application process is simplified by acceptance of MCAT and references and transcripts utilized in applying to the School of Medicine. Students in the combined degree program are given credit for basic science instructions received in the first years of medical school. Summers and elective time during these years provide excellent opportunities to begin research training. Almost the entire fourth year may be devoted to graduate school education.

The minimum requirement in addition to the first three years of medical school is one year for the MS and two years for the PhD degree. Because the medical school curriculum provides a very broad-based background, combined-degree students are required to take few, if any, introductory-level graduate courses. Graduate school courses should provide in-depth education in one discipline.

Students are advised to declare their research interest in the first academic years because the use of elective and summer time may be critical in their individual schedules. For additional information, students may contact the School of Medicine Admissions Office.

Grading and Promotions

Each student's progress toward his/her objectives is evaluated by examination upon each subject matter and by national board examinations at appropriate times. Grades are assigned on the honors, high-pass, pass, marginal, or fail basis. Students receiving marginal or failing grades are counseled. All students are assigned a faculty adviser. This adviser is available to the student throughout the four years of study.

Students who have attained satisfactory grades in M-I and M-II but who do not pass National Boards Part I may receive special instruction in the basic medical sciences during the third school year, prior to their repeating the Part I examination. These students will use part of their fourth year to complete the segments omitted during the special instruction period. Those who do not show significant improvement will be reviewed by the

Promotions Committee, which will formulate a plan for each student.

At the close of each academic year, the Promotions Committee, composed of chairs of departments, recommends to the dean which students have achieved the objectives of the year and are qualified for either promotion or graduation. The Promotions Committee is charged to give careful individual attention to all aspects of student achievement, effectiveness, behavior, and attitude. The committee is charged not to promote any student who has failed to meet the requirements of the preceding year, or who appears unfit for the practice of medicine. When the committee determines by majority vote that a student will not be promoted, it then recommends to the dean remedial activities or dismissal in instances where no remedy is perceived. The dean reviews the recommendations and promptly notifies students that they have been promoted, must repeat a year, or have been dismissed. A student repeating the year is expected to show significant improvement. The Promotions Committee will also meet each January to review the status of all senior students, all third-year students, and MD/PhD candidates. Furthermore, the committee will review any other students in serious academic difficulty and may, at this meeting, choose to take final action, including dismissal, on such students.

An appeals committee of three senior faculty will hear appeals of dismissals when such are filed in writing within 14 days of the student's notice of dismissal. A student may also appeal a decision to repeat a year, but such appeals will be reviewed by the Appeals Committee only when it is found that the student will present information not previously available to the Promotions Committee. A student appealing has the right to appear before the Appeals Committee and to have an adviser participate. The dean of the School of Medicine will act upon the recommendation of the Appeals Committee within 14 days of receipt of the committee's recommendation.

Withdrawal

A student may not leave school prior to completion of an academic year unless granted leave of absence by the dean. A student who leaves without such permission or who fails to return by the end of the granted term of leave is considered dismissed from the class and may return only by applying for possible readmission. Where such a student has demonstrated any academic deficiency, the application is presented to the Promotions Committee.

Requirements for Graduation

The degree of Doctor of Medicine will be conferred by Virginia Commonwealth University upon candidates who, in the opinion of the medical faculty, have:

1. attained the school's educational objectives as evidenced by satisfactory completion of prescribed courses and examinations, by proven clinical skills and responsibilities, and by ethical standards;
2. attended the School of Medicine for a minimum of two years, one of which must be an academic year of clinical rotations; and

3. discharged all financial obligations to the University.

It is the policy of the School of Medicine that candidates must be present at commencement exercises unless excused by the dean.

Student Participation

The dean and faculty solicit the advice of students in conducting the affairs of the medical school. Student officers elected by their classes meet with deans and curriculum coordinators. At these meetings, each phase of the curriculum and any other matters of concern to students are discussed in detail. Each class also elects representatives to the faculty committees which design its curriculum. Students are selected by the dean and the faculty to serve on the Admissions Committee, on faculty tenure committees, and on committees to recommend appointment of deans. A continuing effort is made to improve methods for student evaluation of teaching technique. All students are welcome to visit the deans, teachers, and faculty advisers at any time to volunteer opinions or seek explanations of procedures employed by the school.

Student Fellowships

Opportunities are available for study and investigation under the tutelage of faculty members in their laboratories during the summer vacation and as an extracurricular activity during the school year.

These studies are supported by the A. D. Williams fellowship endowment and the School of Medicine Alumni Association (Aesculapian Fellowships) with selections made by the A. D. Williams Research Advisory Committee.

The Robert C. Bryan Summer Fellowship in Pathology was given by Mr. Jonathan Bryan in memory of his father.

The Arthur T. Lyman Fellowship in Pathology is awarded to an outstanding student participating in the summer fellowship program. This represents a gift from Mrs. Fairfield Goodale in memory of her father.

Financial Assistance

A brief description of financial aid based on demonstrated need is contained in Part III of this *Bulletin*. Financial need-based aid programs available to medical students include Health Professions Student Loan, Commonwealth of Virginia Medical Scholarship, Norfolk Foundation Scholarship, Lincoln/Lane Foundation Scholarship, and various institutional loans and grants.

Information on the Commonwealth of Virginia Medical Scholarship and the other programs may be obtained from the Financial Aid officer in the Office of the Associate Dean of Student Activities, School of Medicine.

U.S. Armed Forces Scholarships

The Army, Navy, or Air Force provides up to four years of paid tuition and fees, books and supplies allowance, and a stipend in exchange for military service after

graduation. Normally, the recipient serves one year on active duty for each year of scholarship, with a minimum service of three years. Additional information may be obtained from local armed services recruiting offices.

Honors and Prizes

Student research and honors day is held in May. Begun by the American Medical Student Association, it is now a joint effort of that organization, the Alpha Omega Alpha honorary scholarship society, and the medical school. Honors and prizes in the medical school include:

Alpha Omega Alpha. The Brown-Sequard Chapter, established at MCV in 1940, elects to membership each year senior and junior students who have demonstrated outstanding academic achievement as evidenced by cumulative ranking in the upper one-fourth of the class. Membership is limited to a maximum of one-sixth of each class.

Sigma Xi. Seniors of high scholastic achievement who show promise of success in research may be elected to associate membership in the VCU chapter of this national honorary scientific society.

Sigma Zeta. Outstanding members of the junior and senior classes of the Schools of Medicine, Dentistry, Pharmacy, and Nursing are elected to this honorary scientific society.

L. Beverly Chaney Scholarship. For responsible leadership during the first three years of medical school, a senior scholarship of \$5,000 from the Joseph Collins Foundation in memory of its trustee, Dr. Chaney, who graduated from the School of Medicine in 1918.

Isaac A. Bigger Medal. A medal awarded annually to a surgical resident for integrity, leadership, teaching, and clinical ability, in memory of Dr. Bigger, professor of surgery from 1930 to 1955.

Lee E. Sutton, Jr. Prize. Awarded to a senior student for excellence in pediatrics, in memory of Dr. Sutton, professor of pediatrics from 1938 to 1958, and dean from 1929 to 1942.

Robert C. Bryan Prize. For excellence in sophomore pathology, an annual award is made in memory of Dr. Bryan, professor of urology from 1917 to 1934.

Aubrey H. Strauss Prize. For excellence in sophomore microbiology, an annual award is made in honor of Dr. Strauss, assistant professor of microbiology from 1909 to 1924.

H. L. Osterud Award. The Osterud Award was established to honor the memory of Dr. Hgalmer L. Osterud, an exceptional teacher, administrator, and scholar who was Professor and Chair of the Department of Anatomy from 1922 to 1953. The award is made to a graduate student who has distinguished himself/herself academically, in his/her research, as well as in service to the educational mission of the Department of Anatomy.

Outstanding Pathology Graduate Student. A prize is awarded to the pathology graduate student showing the most promise of success in research.

A. D. Williams Award. Awards are made to a student in each of the first three years of medical school for outstanding academic achievement.

Ciba Award. A set of Netter Atlas volumes is awarded to the sophomore student who has demon-

strated the most beneficial extracurricular activity within the community.

Henry Clay Smith Scholarship. Given in memory of Dr. Henry Clay Smith, a graduate of MCV, to two M-III students most likely to emulate Dr. Smith by careers of service to the health needs of rural Virginia. Selections made by the Department of Family Practice.

Medical Society of Virginia. Given by the Medical Society of Virginia on the basis of financial need and academic excellence.

Southern Medical Association. Given by the Southern Medical Association to two M-I students on the basis of financial need and academic excellence.

Richard Kirkland Scholarship. Given by the Richard Kirkland Scholarship Fund to an M-II student on the basis of financial need and academic excellence.

A. H. Robins Scholarship. Given on the basis of financial need and academic excellence.

Hoak Scholarship. Given on the basis of financial need and academic excellence.

Sidney B. Barham Scholarship. Given in memory of Dr. Sidney B. Barham, Sr. Used for scholarships to deserving medical students elected by the college administration.

Merck Manual. Current edition of the Merck Manual donated by the Merck Company. Four awards given.

Mosby Award. Student receives a certificate from the Mosby Book Company and selects ONE book from the Mosby catalog. Three awards given.

Lange Award. First-, second-, and third-year students receive a selection card and choose two books from the offered selection. Six awards given. Fourth-year students receive a certificate and a selection card to choose four books from the offered selection. Two awards given.

Dean's Award. A book selection from the MCV Campus Bookstore.

Elizabeth Joanne Harbison Award. Given for performance during the M-III pediatric clerkship and M-IV pediatric electives. This award is restricted to students entering the field of pediatrics.

Eric C. Schelin Award. For outstanding work in the OB/GYN department based on academic and clinical achievement. The department provides a monetary award and the name inscribed on a plaque in the Department of Obstetrics and Gynecology.

Harry Walker Award. Given to a student for outstanding performance on the M-II Introduction to Clinical Medicine course. The recipient of this monetary award is selected by a committee from the Alumni Association.

A. J. and Lee Pardoll Endowed Scholarship. This endowed scholarship given by Peter M. Pardoll, MD, 1971, in memory of his parents, provides a \$1,000 scholarship award for a student entering the second year of study and is based on financial need and academic achievement. Priority is given first to students from Florida and then to non-Virginia residents.

A. Jarrell Raper Memorial Scholarship Fund. Given in memory of Dr. A. Jarrell Raper, a graduate of MCV, to minority students on the basis of financial need.

Elise H. and Wesley Wright, Jr. Endowed Scholarship. Given to a Princeton University graduate on the basis of financial need.

W. Donald and Anne Tucker Moore Scholarship.

Given to a second-year student from North Carolina on the basis of financial need and academic excellence.

Seymour Schotz Scholarship. Given to a second-year student on the basis of financial need.

Susan Mellette Scholarship and Fellowship Fund. Given to students who have demonstrated interest and achievement in oncology and on the basis of academic credentials.

Paul Dunn Scholarship. Given to a second-year student on the basis of financial need.

Kinloch Nelson Scholarship Award. Given on the basis of demonstrated leadership ability, academic accomplishment, and financial need.

William Wallen Meyer Scholarship. Given on the basis of academic achievement.

Walther Riese Award in Neuroanatomy. The Riese Award was established to honor the memory of a truly devoted physician, professor, researcher, and humanitarian. Dr. Walther Riese was a professor of neurology and psychiatry at the Medical College of Virginia from 1947 to 1960. The award is made to a student who has distinguished himself/herself academically in the neurosciences.

Jack Denning Burke Award in Cell Biology. The Burke Award was established to honor the memory of Dr. Jack Denning Burke, Professor in the Department of Anatomy from 1964 to 1978, a truly great teacher and scientist, and author of a textbook in the field of cell biology. The award is made to a student who has distinguished himself/herself academically in histology/cell/molecular biology.

Graduate Degree Programs (PhD, MS, MPH, Certificate)

The School of Medicine offers a diversity of advanced degree training programs leading to the Doctor of Philosophy, Master of Science, specialized Master's and Certificate Degrees. Advanced degree training is coordinated through the Office of Graduate Education. PhD and MS training is conducted through programs formally housed in the Departments of Anatomy, Biochemistry and Molecular Biophysics, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology and Physiology.

Interdisciplinary curriculum tracks in immunology, molecular biology and genetics, neuroscience, and structural biology are available through participating departments. Specialized programs at the master's level, the Master of Public Health, and the Master of Genetic Counseling are also offered in the Department of Preventive Medicine and Community Health and the Department of Human Genetics, respectively. Additional interdisciplinary training programs in anatomy or physiology/physical therapy and combined degree programs (MD/PhD, DDS/PhD, MD/MPH) are administered in the School of Medicine.

Information on admissions, requirements and application is provided in detail in the *Graduate Bulletin*. Contact information for the various programs and departments is listed:

Anatomy

Dr. John Povlishock, Chair; Contact Dr. Leichnetz, (804) 828-9512; anaapply@gems.vcu.edu

Biochemistry

Dr. Robert K. Yu, Chair; Contact Dr. Shelton, (804) 828-9526; bicapply@gems.vcu.edu

Biostatistics

Dr. W. H. Carter, Chair; Contact Dr. Ko, (804) 828-9824; bisapply@gems.vcu.edu

Microbiology

Dr. John Tew, Interim Chair; Contact Dr. Conrad, (804) 828-2311; micapply@gems.vcu.edu

Pathology

Dr. David Wilkerson, Chair; Contact Dr. Ware, (804) 828-9746; patapply@gems.vcu.edu

Pharmacology

Dr. George Kunos, Chair; Contact Dr. Woodward, (804) 828-8902; pmcapply@gems.vcu.edu

Physiology

Dr. Margaret Biber, Chair; Contact Dr. Poland, (804) 828-9557; pioapply@gems.vcu.edu

Preventive Medicine

Dr. Jack O. Lanier, Chair; Contact Dr. Lanier, (804) 828-9785; mphapply@gems.vcu.edu

Genetic Counseling

Contact Ms. Phelps (804) 828-9632; genapply@gems.vcu.edu

Molecular Biology and Genetics

Contact Dr. Christie (804) 828-9093; christie@gems.vcu.edu

Immunology

Contact Dr. Tew (804) 828-9715; tew@gems.vcu.edu

Neuroscience

Contact Dr. Satin (804) 828-7823; lsatin@hsc.vcu.edu

MD/PhD

Contact Dr. Earl Ellis, Director; (804) 828-8399; eellis@gems.vcu.edu

The School of Medicine also offers a didactic post-baccalaureate program for students seeking preparation for entry into medical school. The two-semester certificate program offers advanced basic science training in six disciplinary areas (anatomy, biochemistry and molecular biophysics, human genetics, microbiology and immunology, pharmacology and toxicology, and physiology).

Master of Public Health

The graduate program in public health is offered through the Department of Preventive Medicine and Community Health of the School of Medicine and leads to the Master of Public Health degree. The MPH program is closely linked with regional and state public health agencies to enhance the student's appreciation and understanding of applying public health principles to practice. Information on admission and course requirements and application forms for admission may be obtained by writing to the School of Graduate Studies, Virginia Commonwealth University, P.O. Box 843051, Richmond, VA 23284-3051, or to the Director of the MPH Program, Department of Preventive Medicine and Community Health, School of Medicine, Virginia Commonwealth University, P.O. Box 980212, Richmond, VA 23298-0212.

Course Descriptions

Courses in Anatomy

ANA 301 Head and Neck Anatomy (Dental Hygiene). I. Semester course; 3 lecture and 4 laboratory hours. 5 credits. An overview of head and neck anatomy with emphasis on oral structures.

ANA 302 Microscopic Anatomy (Dental Hygiene). II. Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. A lecture course in the microscopic anatomy of general body tissues and the oral cavity.

ANA 501 Gross Anatomy (Dentistry). I. Semester course; 5.5 lecture and 8 laboratory hours. 9.5 credits. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

ANA 502 Microscopic Anatomy (Dentistry). I. Semester course; 3 lecture and 6 laboratory hours. 6 credits. A study of the normal tissues and organs of the human body at the microscopic level, with emphasis on the histological organization and development of the oral cavity.

ANA 503 Neuroanatomy (Dentistry). I. Semester course; 1.5 lecture hours. 1.5 credits. This course provides the student with a broad exposure to the field of neuroanatomy. The structure and connections of the brain and spinal cord are stressed to prepare the student for dealing with physiological, pharmacological, and clinical aspects presented in other courses.

ANA 505 Principles of Human Anatomy (Pharmacy). I. Semester course; 2.5 lecture and 1.5 laboratory hours. 3 credits. The structure of the human body is surveyed by studying micro-, neuro-, and gross Anatomy. Emphasis is placed on basic concepts and their application to various body components.

ANA 509/PIO 509/PMC 509 Introduction to Neuroscience. I. Semester course; 3 lecture hours. 3 credits. Prerequisites: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

ANA 525 Advanced Functional Anatomy (Occupational Therapy). I. Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisites: BIO 205 or equivalent and permission of the instructor. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Emphasis is placed on the study of the extremities, particularly the hand.

ANA 529 Advanced Functional Neuroanatomy (Occupational Therapy). II. 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: ANA 525 and permission of instructor. A study of the morphological and functional aspects of the central and peripheral nervous systems of the human body with particular emphasis on motor activity.

ANA 609 Gross and Developmental Anatomy. I. Semester course; 4 lecture and 10 laboratory hours. 8 credits. A dissection and macroscopic study of the human body, with clinical correlations.

ANA 610 Neuroanatomy. II. Semester course; 4 lecture and 2 laboratory hours. 5 credits. A study of the structure, connections and function of the central nervous system. Laboratory sessions complement lecture presentations, emphasizing light microscopic and ultrastructural neurohistology, gross and sectional anatomy of the brain, and tracing of functionally related CNS connections.

ANA 611 Histology. I. Semester course; 4 lecture and 2 laboratory hours. 5 credits. A study of the basic light and electron microscopic structure of cells, tissues, and organs. Emphasis on correlating structure with function.

ANA 613 Advanced Studies in Anatomy. I, II, S. 1-6 credits. An in-depth course in specific areas of anatomy: histology, gross anatomy, and neuroanatomy.

ANA 614 Cytology. I. Semester course; 2 lecture hours. 2 credits. A topical approach to current areas of interest in mammalian cell and molecular biology.

ANA 690 Anatomy Research Seminar. I, II. 1 lecture hour. 1 credit. A course consisting of faculty and student-led seminars presenting current research in neurobiology, immunobiology, and reproductive biology.

ANA 691 Special Topics in Anatomy. I, II, S. 1-4 credits. Lectures, seminars, tutorial sessions, and/or library research assignments in selected areas of advanced study not available in other graduate level anatomy courses, or as concentrated emphasis on a particular area of anatomical research.

ANA 697 Directed Research in Anatomy. I, II, S. 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Biochemistry and Molecular Biophysics

BIC 403-404 Biochemistry (Undergraduate). I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: CHE 301-302 or equivalent with permission of instructor. A presentation of structural biochemistry, enzymology, bioenergetics, intermediary metabolism, and molecular genetics.

BIC 501 Biochemistry (Dentistry). I. Semester course; 5 lecture hours plus clinical correlations. 5 credits. Prerequisite: Organic chemistry, three credits of physical chemistry, or permission of instructor. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as part of the fundamental background of modern dentistry. Four clinical correlation workshops complement the lecture presentations.

BIC 502 Biochemistry (Medicine). I. Semester course; 3 lecture hours. 3 credits. An introduction of structural biochemistry, intermediary metabolism, cell biology and methods of biochemical analysis as part of the fundamental background of modern medicine. Enrollment restricted to students accepted in the School of Medicine.

BIC 503-504/MIC 503-504 Biochemistry, Cell and Molecular Biology. I, II. Continuous course; 5 lecture hours. 5 credits. Prerequisites: Undergraduate organic and physical chemistry, or permission of the instructor. A comprehensive introductory course that describes basic biochemistry and reviews current concepts of modern cell and molecular biology.

BIC 505-506 Experimental Biochemistry. I, II. Continuous course; 4 laboratory hours. 2 credits. Prerequisite: BIC 503 (or concurrent) or equivalent quantitative chemistry. Laboratory work, including theory and practice of advanced biochemical research methods.

BIC 507-508 Bioorganic Chemistry. I, II. Continuous course; 3 lecture hours. 2 credits. Prerequisite: Permission of the instructor. Study of structure, chemistry, and mechanism of small, biologically important molecules.

BIC 509 Biophysical Chemistry. I. Semester course; 3 lecture hours. 2 credits. Study of major physical/chemical concepts of biological organization with emphasis on self-assembly and dynamic interactions of biological structures.

BIC 510 Radiation Safety. I, II, S. Semester course offered on a demand basis (2-4 times or approximately 20 students per year); 15 lecture hours. 1 credit. Provides basic principles for the safe use of radioactive materials in biological research and meets the minimum training requirements set forth for responsible investigators in the University's Nuclear Radiation License.

BIC 516C Human Nutrition. I. Semester course; 3 lecture hours. 3 credits. This off-campus survey course is designed for secondary school health and physical education, and biology teachers as well as others who wish to expand their knowledge of nutrition. The course involves core as well as current issues in Human Nutrition and primarily involves a series of interdisciplinary lecture/discussions. Topics include: description of the biochemistry and physiology of food components and nutrients; the accepted recommendations relating to health, nutrition and exercise, physical fitness and athletic performance; as well as topics related to eating disorders; growth and development; nutrition misinformation; nutrition and health issues.

BIC 523-524 Biochemistry (Pharmacy). I,II. Continuous course; 2-3 lecture hours. 2-3 credits. Prerequisites: CHE 301-302 or equivalent. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as a part of the fundamental background of modern pharmacy.

BIC 550 Basic Science Core Curriculum for Postgraduate Dental Students. I. Semester course; 3 lecture hours. 3 credits. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

BIC 601 Membranes and Lipids. II (Alternate years Spring 1999). Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 503-504. Comprehensive presentation of important areas in biological membrane research. Key topics include techniques in the study of membrane lipids and proteins, "order" and organization in membranes, transport, receptors and cell surface antigens, physical measurements in membranes, reconstituted systems, and signal transduction.

BIC 602 Physical Properties of Macromolecules. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 503-504 and physical chemistry. Physicochemical approaches to the determination of the structure and conformation of macromolecules.

BIC 604 Enzymology. I. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIC 503-504. Physical and chemical properties and mechanisms of action of enzymes. Treatment of chemical catalysis, enzyme kinetics, and correlation of enzyme structure to mechanisms.

BIC 605 Molecular Biology. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: Undergraduate chemistry or biochemistry. Nucleic acid structure, genetic code, DNA replication, transcription, translation; structure and properties of self-assembling systems: viruses, ribosomes, cytoskeletal proteins, and membranes.

BIC 606 Biochemical Control Processes. II (Alternate years Spring 1998). Semester course; 3 lecture hours. 3 credits. Prerequisite: BIC 503-504 and permission of instructor. An advanced course on aspects of control mechanisms at the molecular level.

BIC 610 Current Trends in Biochemistry. I. Semester course; 2 lecture hours. 2 credits. Prerequisites: BIC 503-504. A study and literature review of common and complex biochemical substances using recent research methodology.

BIC 690 Biochemistry Research Seminar. I, II. Semester course; 1 credit. Reports on recent biochemical literature and research by students and staff.

BIC 691 Special Topics in Biochemistry. I, II. Semester course; 1-4 credits. Lectures, tutorial studies and/or special assignments in selected areas of advanced study not available in other courses or as part of research training.

BIC 697 Directed Research in Biochemistry. I, II, S. Semester course; 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Biostatistics

BIS 513-514/STA 513-514 Mathematical Statistics. I,II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 307 Multivariate Calculus. Probability, random variables and their properties, distributions, conditional distributions, moment generating functions, limit theorems; Neyman-Pearson and likelihood ratio criteria for testing hypotheses.

BIS 516 Biostatistical Consulting. I, II. Semester course; 1 lecture hour. 1 credit. The principles dealing with the basic art and concepts of consulting in biostatistics. The nonstatistical course discusses role, responsibilities of biostatisticians, relationship between clients and consultants, method of writing reports, etc.

BIS 523/STA 523 Nonparametric Statistical Methods. II. Semester course; 3 lecture hours. 3 credits. Prerequisites: Any two courses of statistics or permission of instructor. Estimation and hypothesis testing when the form of the underlying distribution is unknown. One-, two-, and k-sample problems. Tests of randomness, Kolmogorov-Smirnov tests, analysis of contingency tables, and coefficients of association.

BIS 524 Biostatistical Computing. I. Semester course; 3 lecture hours. 3 credits. The Statistical Analysis System (SAS) is both a powerful computer language and a large collection of statistical procedures. Students learn how to create and manage computer data files. Techniques for thorough examination and validation of research data are presented as the initial step of a complete, computerized analysis. Descriptive statistics are computed and statistical procedures such as t-tests, contingency tables, correlation, regression, and analysis of variance then applied to the data. Special attention is paid to the applicability of each procedure. Students are encouraged to analyze their own or typical data from their discipline.

BIS 530 Elements of Biometry. II. Semester course; 5 lecture hours weekly during January and February. 2 credits. For dental and medical fellows; graduate students with consent. Concepts of biostatistics and epidemiology. Summary statistics and tables. Normal distribution and statistical association. Chi-square tests, t-tests, Wilcoxon test, and other tests. Sensitivity, specificity, odds ratios, and related topics. Clinical trials, prospective and retrospective studies, and other miscellaneous topics in biostatistics and epidemiology.

BIS 531 Clinical Epidemiology. II. Semester course; 3 lecture hours. 3 credits. Epidemiological concepts necessary for evidence based studies of medicine. Specific topics will include: cause and effect criteria, demographic rates, measures of association or effect, study designs, decision trees, meta-analysis, evaluation of the literature, sources of data, reliability and validity, bias, confounding and effect modification, screening and diagnostic tests, sensitivity, specificity, false positives, false negatives, applications of the above to diagnosis and treatment, treatment efficacy and improved patient care. This course is intended primarily for clinicians. Permission of the course coordinator is required for others interested in registering.

BIS 543, 544/STA 543,544 Statistical Methods I, II. I,II. Semester courses; 3 lecture hours. 3,3 credits. Prerequisite: Graduate standing or one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including: the collection and display of information, data analysis, and statistical measures; variation, sampling, and sampling distributions; point estimation, confidence intervals, tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance, and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit.

BIS 546 Linear Models. II. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIS 513 and 543/553. Distribution of quadratic forms under normal theory; general linear model of full rank and less than full rank, Gauss-Markov theorem; estimability.

BIS 553-554 Applied Statistics. I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 200-201 or equivalent and one previous course in statistics and permission of instructor. Introduces applied statistics of biostatistics intended primarily for graduate students in the Department of Biostatistics. Reviews elementary probabil-

ity, theory and frequency distributions, sampling theory, principles of inference, one and two sample problems. ANOVA. Principles of experimental design. Variance components. Multiple comparison procedures. Block designs and Latin Squares. Nested ANOVA. Multiway ANOVA. Correlation and regression analysis. Multiple regression. Nonlinear regression. ANCOVA. MANOVA. Repeated measures.

BIS 571 Clinical Trials. I. Semester course; 3 lecture hours. 3 credits. Concepts of data management and statistical design and analysis in single-center and multi-center clinical trials. Data management topics include the collection, edition, and validation of data. Statistical design topics include randomization, stratification, blinding, placebo- and active-control groups, parallel and crossover designs, and power and sample size calculations. Statistical analysis topics include sequential and group sequential methods.

BIS 572 Statistical Analysis of Biomedical Data. II. Semester course; 3 lecture hours. 3 credits. Statistical methodology for data sets frequently encountered in biomedical experiments. Topics include analysis of rates and proportions, epidemiological indices, frequency data, contingency tables, logistic regression, life-tables and survival analysis.

BIS 581 Applied Multivariate Analysis. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIS 544 or 554. Focuses on multivariate statistical methods, including Hotelling's T-square, MANOVA, multivariate multiple regression, canonical correlation, discriminant analysis, partially and blocking, multivariate outliers, components and factor analysis, and GMANOVA. Presumes the material in BIS 543-544 or BIS 553-554, including a matrix approach to multiple regression.

BIS 615-616 Advanced Inference. I, II. Continuous course; 4 lecture hours. 4 credits. Prerequisites: BIS 514 and MAT 508, or permission of instructor. Mathematical preliminaries: probability and measure; integration; modes of convergence. Decision theoretical approach to statistical inference; decision rules; admissibility. Bayes and minimax procedures, invariance; complete classes. Point estimation; unbiasedness; efficiency; M, L, and R estimators; U statistics. Hypothesis testing; the Neyman-Pearson theory; unbiasedness and invariant tests; conditional tests; permutation tests; rank tests; likelihood based tests. Interval estimation; confidence sets; relationship between confidence sets and families of tests; unbiased and invariant confidence sets. Asymptotics; stochastic convergence; statistical limit theorems; ARE; asymptotic likelihood based procedures. Overview of robust statistical procedures.

BIS 625 Analysis of Categorical Data. I (Alternate years beginning Fall 1997). Semester course; 4 lecture hours. 4 credits. Prerequisites: BIS 514, 554 and 572. Introduction to the theory and methods of analysis of binomial and multinomial data. Topics include exact and asymptotic analysis of contingency tables; measures of association and agreement; modeling approaches including logistic regression, loglinear models, tests; invariance, MANOVA, GMANOVA, and multiple design models, nonparametric methods; inference with covariance matrices; principal components; factor analysis; discriminant analysis; clustering; multidimensional scaling.

BIS 631-632 Multivariate Analysis. I, II. (Alternate years beginning Fall 1998.) Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: BIS 514, 546, and 554. Introduction to the theory and methods of multivariate analysis; distributions; partial, multiple, and economical correlations; maximum likelihood and decision theoretical estimation; one- and two-sample tests; invariance: MANOVA, MANCOVA, GMANOVA, and multiple design models, nonparametric methods; inference with covariance matrices; principal components; factor analysis; discriminant analysis; clustering; multidimensional scaling.

BIS 638-639 Statistical Design and Analysis in Toxicology. I, II (Alternate years beginning Fall 1998). Continuous course; 3 lecture hours. 3-3 credits. Prerequisites for BIS students: BIS 514 and 554. Prerequisite for non-BIS students (who can enroll on a P/F basis): BIS 554. Classical bioassay, dose-response relationships, continuous and quantal data; probit and logit analysis; estimation of the ED₅₀; combination experiments; low dose extrapolation and risk assessment; carcinogenicity, mutagenicity, and teratogenicity screening; overview of laboratory and experimental problems for the toxicologist.

BIS 647 Survival Analysis. II (Alternate years beginning Spring 1998). Semester course; 3 lecture hours. 3 credits. Prerequisites: BIS 514 and 554. The analysis of survival (or failure time) data, with/without censoring. Actuarial and life-table methods, nonparametric and parametric estimation of survival functions, and comparison of survival curves; regression methods, such as the Cox proportional hazards model; competing risks; sequential models; applications to clinical trials.

BIS 650 Design and Analysis of Response Surface Experiments. I (Alternate years beginning Fall 1997). Semester course; 3 lecture hours. 3 credits. Prerequisites: BIS 546 and 554. Philosophy, terminology, and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analyses, description of the response surfaces, rotatability, uniform information designs, central composite in design, and modern design criteria.

BIS 655 Quantitative Epidemiology. II (Alternate years beginning Spring 1998). Semester course; 3 lecture hours. 3 credits. Prerequisites: BIS 554 and 572. Examines the quantitative aspects of epidemiological research. Includes causality in epidemiological research; the design, analysis, and interpretation of cohort and case-control studies; bias, confounding, and misclassification, matching, stratification, and adjusting of covariates; generalized linear models in epidemiological research, goodness-of-fit tests, and goodness-of-link tests.

BIS 660 Sequential Analysis and Advanced Design and Analysis of Clinical Trials. II (Alternate years beginning Spring 1997). 3 lecture hours. 3 credits. Prerequisites: BIS 514 and 554. Sequential methods versus fixed sample methods; the sequential probability ratio test with extensions and modifications; some applications of Cox's theorem; overview of analysis of clinical trials; closed and truncated tests; group sequential tests in clinical trials; sequential monitoring; sequential estimation; other topics with emphasis in clinical trials.

BIS 667 Advanced Data Analysis. I, II (Alternate years beginning Spring 1998). Semester course; 3 lecture hours. 3 credits. Prerequisites: BIS 514 and 554. Explores recently developed data analysis techniques to find the main features and underlying structure of data. Includes robust methods, bootstrap, linear model diagnostics, cross validation, nonparametric regression, optimal transformation, ACE algorithm, projection pursuit regression.

BIS 690 Biostatistical Research Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Talks by the students, faculty, and visitors describing recent research or reviewing topics of mutual interest.

BIS 691 Special Topics in Biostatistics. I, II, S. Semester course; Lecture and laboratory hours by arrangement. 1-4 credits. Lectures, tutorial studies, library assignments in selected areas of advanced study or specialized biostatistical procedures not available in other courses or as part of the research training.

BIS 697 Directed Research in Biostatistics. I, II, S. Semester course; 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Human Genetics

GEN 501/BIO 530 Human Genetics. I. Semester course; 3 credits. Prerequisites: BIO 310 and CHE 301, L301, 302, L302, or equivalents. Emphasizes a broad approach, at an advanced level, to human genetics. Explores topics including cytogenetics, pedigree analysis, gene mapping, aneuploid syndromes, inborn error of metabolism, neo-natal screening, cancer, genetic engineering, behavior and intelligence, pre-natal diagnosis, and genetic counseling.

GEN 502 Advanced Human Genetics. I, II. Semester course; 2-6 lecture hours. 2-6 credits. Prerequisite: GEN 501 or equivalent. For human genetics graduate students only. A comprehensive study of the principles of specific areas in human genetics.

GEN 511 Human Cytogenetics. I. (Even years only beginning in 1998.) Semester course; 3 lecture hours. 3 credits. Prerequisites: GEN 501 and GEN 502. A discussion of recent advances in human cytogenetics. Topics covered will include chromosome banding techniques and ultrastructure,

meiosis, numerical and structural abnormalities, fragile sites, cancer cytogenetics, methodology for linkage studies, and population cytogenetics. Clinical cases are used to illustrate the application of special diagnostic methodologies.

GEN 516 Population Genetics. II. Semester course; 3 lecture hours. 3 credits. Genetic and ecological factors affecting normal and abnormal variation within and between populations of organisms, especially man.

GEN 518 Methods in Human Population Genetics. I. Semester course; 3 lecture hours. 3 credits. Data analysis and discussion of methods including segregation analysis and linkage. Topics covered will include inbreeding, ascertainment, and genetic epidemiology.

GEN 525-526 Practice of Genetic Counseling. I and II. Continuous course; 3 lecture hours. 3-3 credits. Provides context for practice of genetic counseling through literature review and practical techniques. Places specific emphasis on pregnancy and childhood evaluation, interviewing techniques, social and ethical issues, including fieldwork in prenatal, general genetics and specialty clinics.

GEN 527-528 Medical Genetics. I and II. Continuous course; 3 lecture hours. 3-3 credits. Provides medical information and principles of human genetic disease with specific emphasis on the molecular basis of Mendelian disorders, disorders of sexual development, assessment of dysmorphic features, and the genetics of common diseases. Emphasizes the use of all available resource materials in genetics.

GEN 531 Dental Genetics. I. Semester course; 1 lecture hour. 1 credit. The basis of inheritance and variation in man, including simple and complex modes of inheritance, the nature of mutations, human chromosomal aberrations, variation in protein and antigens, genetic aspects of some syndromes, and birth defects.

GEN 600 Clinical Genetics. I, II, and S. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisite: GEN 501 or equivalent. Practical experience in the genetic counseling clinic and on ward rounds. Includes collection and analysis of family histories, genetic counseling, and introduction to genetic nosology.

GEN 603 Mathematical and Statistical Genetics. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIS 543-544 or equivalent. Provides an introduction to the rudiments of theoretical and applied mathematical population genetics including the segregation of genes in families, genetic linkage and quantitative inheritance. Emphasizes the methods used in the analysis of genetic data.

GEN 614 Human Biochemical and Molecular Genetics. I. (Odd years only beginning in 1999.) Semester course; 4 lecture hours. 4 credits. Prerequisites: BIC 503-504, equivalent, or permission of instructor. Surveys the mechanisms and varieties of human gene mutations resulting in human genetic disease and emphasizes the different investigational disorders using current scientific literature.

GEN 617 Segregation and Linkage Analysis. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Introductory Biostatistics or permission of instructor. Introduces the theory and practice of segregation and linkage analysis as applied to human kinship data. Emphasizes the techniques for the detection, characterization, and mapping of single loci with large effects on phenotype.

GEN 618 Advanced Segregation and Linkage Analysis. I (odd years only beginning in 1999). Semester course; 3 lecture hours. 3 credits. Prerequisite: GEN 617 or permission of instructor. Focuses on advanced topics related to segregation and linkage analysis. Presents alternatives to single major locus segregation patterns, advanced linkage analysis techniques such as multipoint mapping, and combined segregation and linkage analyses.

GEN 619 Quantitative Genetics. I. Semester course; 3 lecture hours. 3 credits. The effects of genes and environment on complex human traits with emphasis on: Genetic architecture and evolution; nongenetic inheritance; mate selection; developmental change; sex-effects; genotype-environment interaction; resolving cause from effect; design of genetic studies, statistical methods and computer algorithms for genetic data analysis.

GEN 620 Principles of Human Behavioral Genetics. I. (Even years only beginning in 1998.) Semester course; 3 lecture hours. 3 credits. The theory of genetic and nongenetic transmission considered in relation to the design, analysis, and interpretation of studies to identify the principal genetic and environmental causes of behavioral variation. Included will be analysis of intelligence, personality, social attitudes, and psychiatric disorders.

GEN 690 Genetics Research Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Selected topics in genetics presented by students and staff.

GEN 691 Special Topics in Genetics. I, II. 1-4 credits. Lectures, tutorial studies, library assignments in selected areas of advanced study or specialized laboratory procedures not available in other courses or as part of the research training.

GEN 697 Directed Research in Genetics. I, II, S. 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Microbiology and Immunology

MIC 365 Infection and Immunity (Dental Hygiene). I. Semester course; 3 lecture and 2 laboratory hours. 3 credits. A study of infectious diseases and the immune system of man with emphasis on the distribution properties and roles of pathogenic microorganisms and the varied responses of the host, with emphasis on oral pathologies. Principles of prevention, control, and chemotherapy of infectious diseases are major components of the course. Microbiological procedures that relate to nursing and dental hygiene practice are demonstrated, practiced, and evaluated in laboratory exercises and conferences.

MIC 501 Microbiology. II. Semester course; 3 lecture and 3 laboratory hours. 3 credits. Prerequisite: BIC 402 or equivalent. A study of the fundamental principles of microbiology with special emphasis on those aspects of the subject that are of importance in the control of the disease state. Offered in the School of Pharmacy and open primarily to pharmacy students in the junior year; others by permission of the instructor.

MIC 503-504/BIC 503-504 Biochemistry, Cell and Molecular Biology. I, II. Semester course; 5 lecture hours. 5 credits. Prerequisites: Undergraduate organic and physical chemistry, or permission of the instructor. A comprehensive introductory course that describes basic biochemistry and reviews current concepts of modern cell and molecular biology.

MIC 505 Immunobiology. I. Semester course; 3 lecture hours. 3 credits. A survey of immunobiology as a total host response to foreign agents, covering the nature of antigens and antibodies, antigen-antibody reactions, immunocompetent cells, allergic reactions, tumor immunology, transplantation immunology, and immunogenetics.

MIC 507 Techniques in Molecular Biology and Genetics. I. Semester course; 1 or 2 lecture hours. 1 or 2 credits. Prerequisite: BIC/MIC 503-504 or equivalent, permission of instructor. This course is designed to give an overview of the techniques utilized in modern molecular biology. The principles underlying techniques such as plasmid and phage cloning, RNA detection, PCR, DNA sequencing, genomic mapping, heterologous gene expression, and production and analysis of recombinant protein will be discussed in detail by experts in the field.

MIC 508-509 Introduction to Microbiology and Immunology Research. I, II, and S. Continuous course; 1 lecture and 4 laboratory hours. 3-3 credits. Prerequisite: Permission of instructor. Required of all first-year graduate students. Introduction to all active research programs in microbiology and immunology. Presentations of research programs by investigators and rotation of students through faculty laboratories to gain direct exposure to individual research projects.

MIC 510 Scientific Integrity. I. Semester course; 1 lecture hour. 1 credit. A survey of contemporary issues relating to scientific integrity and ethics. Topics include scientific fraud and misconduct, peer review, use of humans and animals in biomedical research, ownership of data,

intellectual property, conflict of interest, scientific record keeping, and biomedical ethics.

MIC 512 Laboratory Safety. I. Semester course; 1 lecture hour. 1 credit. Describes health hazards commonly found in biomedical laboratories and appropriate safety precautions and responses. Includes hazards of working with bacteria, viruses, parasites, fungi, recombinant DNA procedures and regulations, and chemical, electrical, and fire hazards.

MIC 513 Infection and Immunity (Dentistry). II. Semester course; 3.5 lecture and 4 laboratory hours. 5.5 credits. A lecture and laboratory study of the disease producing microorganisms of man with special emphasis on the roles of microorganisms in oral diseases and related topics that are of importance in dentistry.

MIC 516 Medical Microbiology. II. Semester course; 3 lecture hours. 3 credits. A comprehensive introduction to the basic principles of virology, human parasitology, bacteriology, and mycology. Interactions of the infecting agents and hosts will be stressed at the molecular and cellular level.

MIC 519 Molecular Mechanisms of Microbial Pathogenesis. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Undergraduate-levels courses in microbiology or microbial physiology, immunology, and molecular genetics. The goals of this comprehensive course are to explore in detail the virulence mechanisms of microbes and the response of the infected host. The focus will be on important bacterial and viral pathogens.

MIC 551 Basic Science Core Curriculum for Postgraduate Dental Students. II. Semester course; 1-3 lecture hours. 1-3 credits. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

MIC 604 Cell Physiology and Metabolism. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: MIC 503. An advanced course on the physiology and metabolism of prokaryotic and eukaryotic cells with some emphasis on the regulation of cell functions. Lectures and class discussions will focus on current scientific literature including review articles and original research papers.

MIC 605 Molecular Biology and Genetics. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Undergraduate organic and physical chemistry, or permission of the instructor. A comprehensive introductory course that describes the structure of the genetic material and the molecular mechanisms involved in its maintenance, replication, transmission and expression. Emphasis will be on experimental approaches integrating genetics and biochemistry in the studies of molecular genetics in prokaryotic and eukaryotic cellular and viral systems.

MIC 653 Advanced Molecular Genetics. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: MIC 517 or equivalent or permission of instructor. An advanced course on the molecular mechanisms of gene regulation in prokaryotic and eukaryotic cells, with some emphasis on developmental control of gene expression, oncogenesis, and the molecular basis of antibody diversity. Lectures and class discussion will focus on current scientific literature, including original research papers and recent review articles.

MIC 686 Advanced Immunobiology. II. Semester course; 2 lecture hours. 2 credits. Open primarily to residents, medical students, and graduate students with an immunology background such as MIC 506. Lectures, seminars, and conferences on basic and clinical immunobiology. Topics have included tumor immunology, cell interactions in the immune response, genetics of the immune response, mechanisms of host-defense and membrane receptors in immunology and neoplasia.

MIC 690 Microbiology Research Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminars.

MIC 691 Special Topics in Microbiology. I, II. Semester course; 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

MIC 697 Directed Research in Microbiology. I, II, S. Semester course; 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Neuroscience

NEU 891 Advanced Topics in Neuroscience. I, II. Semester course; 1 lecture hour. 1 credit. Prerequisite: Permission of instructor. Advanced topics in neuroscience with correlations to research and clinical applications. Interdisciplinary presentation of the relationship of principles of neuroscience to current areas of investigation.

Courses in Pathology

PAT 521 Laboratory Techniques in Diagnostic Pathology. I. (Alternative years beginning Fall 1999.) Semester course; 3 lecture hours. 3 credits. This team taught course includes principles of automated and non-automated testing diagnostic testing, and an active laboratory demonstration of each method.

PAT 522 Clinical Chemistry. II. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. Prerequisite: Permission of instructor. The metabolic basis of disease and the interpretation of laboratory data for diagnosis and patient management.

PAT 570 Experimental Approaches to Tumor Biology. I. Semester course; 3 lecture/discussion hours. 3 credits. Introduces central problems in tumor biology and the methods available for their study. Develops through lectures and presentations skills in critical review and interpretation of research reports.

PAT 590 Experimental Pathology Seminar. I, II. Semester course; 1 lecture hour. 1 credit.

PAT 601 General Pathology (Dentistry). I. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Instruction in the basic principles regarding alteration of structure and function in disease and in the pathogenesis and effect of disease in the various organ systems.

PAT 620 Special Topics in Modern Instrumental Methods. I, II, S. Semester course; 1 lecture and 2 laboratory hours. 2 credits. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studies.

PAT 690 Clinical Chemistry Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Graduate students, residents, and staff present topics of current interest in clinical chemistry.

PAT 691 Special Topics in Modern Instrumental Methods. I, II, S. Semester course; 1 lecture and 2 laboratory hours. 2 credits. By special arrangement with instructor. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studied.

PAT 697 Research in Pathology. I, II, S. Semester course; 1-15 credits. Research leading to PhD degree and elective research projects for other students.

Courses in Physiology

PIO 206 Human Physiology. Semester course; 3 lecture hours. 3 credits. Prerequisite: 4 credits in biology. Functioning of the human body with emphasis on experimental procedures. (Not applicable to the biology major.)

PIO L206 Human Physiology Laboratory. Semester course; 2 laboratory hours. 1 credit. Pre or corequisites: PIO 206. Functioning of the human body with emphasis on experimental procedures. (Not applicable to the biology major.)

PIO 461 Introduction to Human Physiology. I. 3 lecture hours. 3 credits. Prerequisites: Biology, general chemistry, and human anatomy. An introductory course to human physiology based on an analysis of organ systems.

PIO 501 Mammalian Physiology I. Semester course; 5 lecture hours. 5 credits. Prerequisites: Biology, chemistry, and physics. A comprehensive study of the function of mammalian organ systems, designed primarily for graduate students.

PIO 502 Mammalian Physiology II (Dentistry). Semester course; 5 lecture hours. 5 credits. Prerequisites: Same as for PIO 501. A comprehensive study of the function of mammalian organ systems, designed primarily for dental students.

PIO 504c Mammalian Physiology. II. Semester course; 3 lecture hours. 3 credits. A comprehensive study of the function of mammalian organ systems, designed primarily for high school science teachers.

PIO 506 Mammalian Physiology (Pharmacy). II. Semester course; 4 lecture hours. 4 credits. A comprehensive study of the function of mammalian organ system, designed primarily for pharmacy students.

PIO 509/ANA 509/PMC 509 Introduction to Neuroscience. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

PIO 512 Cardiovascular and Exercise Physiology II. II. Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 501 or permission of instructor. A comprehensive study of cell and system cardiovascular and exercise physiology with pathophysiological implications, primarily designed for professional students. Physiological basis and introduction to the practical interpretation of the electrocardiogram will be taught with a computer-assisted method.

PIO 604 Cell Physiology. II. Semester course; 4 lecture hours. 4 credits. A description of the functional properties of cells in terms of physics and chemistry. Topics discussed include cell structure and cytochemistry, bioenergetics, secretion, transport of material across membranes, excitation, and contractility.

PIO 605 Mathematical Physiology. I. Semester course; 3 lecture hours. 3 credits. The application of set theory to physiological problems. Physiological functions and mappings. Linear transformations. The use of complex numbers. Limits, derivatives, and integrals and their use in physiology. Rate processes. Physiological function and its dependence on many variables. Probabilistic ideas in physiology.

PIO 606 Physical Principles in Physiology. II. Semester course; 4 lecture hours. 4 credits. Prerequisite: PIO 605 or permission of instructor. A survey of those principles of physics and physical chemistry underlying physiological processes. Topics include energetics of equilibrium and non-equilibrium systems, electrode processes, reaction-diffusion systems, kinetics, photochemistry, physical techniques in physiological research.

PIO 612 Cardiovascular Physiology. II. (Alternate years beginning 1998.) Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An in-depth study of the original literature in selected areas of cardiovascular physiology.

PIO 615 Neurophysiology. I. (Alternate years beginning 1999.) Semester course; 3 lecture hours. 3 credits. Prerequisite: PIO 501 or permission of instructor. An in-depth study of the original literature in selected areas of neurophysiology.

PIO 617 Endocrine Physiology. I. (Alternate years beginning 1998.) Semester course; 3 lecture hours. 3 credits. Prerequisites: PIO 501 and BIC 503 or permission of instructor. An in-depth study of the original literature in selected areas of endocrine physiology.

PIO 618 Renal and Epithelial Physiology. II. (Alternate years beginning 1999.) Semester course; 3 lecture hours. 3 credits. Prerequisite: PIO 604 or permission of instructor. An in-depth study of selected areas of renal and epithelial physiology. Topics include mechanisms of salt and water transport in the nephron, urinary concentrating mechanisms, hormonal regulation of ion transport, role of the kidney in acid-base homeostasis, diuretics, ion transport in amphibian epithelia, water and solute transport in gastrointestinal epithelia and lingual epithelia.

PIO 620/PMC 620 Ion Channels in Membranes. II. (Alternate years beginning Spring 1999.) Semester course; 3 lecture hours. 3 credits. Detailed presentation of the fundamental biophysical properties of ionic channels in membranes including the elementary properties of pores, molecular mechanisms of ionic selectivity, mechanisms of drug block, structure-function relationships, and basis for channel gating. Discussion will encompass modern techniques for studying ion channel function. Previous course work including basic concepts in electrophysiology, such as those covered in PIO 501 Mammalian Physiology or PMC/PIO/ANA 509 Introduction to Neurosciences, is highly recommended.

PIO 630 The Application of Network Thermodynamics to the Analysis and Computer Simulation of Life Processes. I, II. Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: Consent of instructor. Network thermodynamics applied to organization in living systems. Relations between biological and electrical networks. Simulation of nonlinear, complex, dynamic, physiological, pharmacological, and biochemical systems with applications to diffusion, blood flow, reaction kinetics, membrane transport (cellular and epithelia), endocrine effects, cellular and whole body pharmacokinetics, model design and verification, metabolic regulation and control, reaction-diffusion systems, morphogenesis, others.

PIO 690 Physiology Research Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminar.

PIO 691 (Section 1) Special Topics in Physiology. I, II. S. 1-4 credits. Prerequisites: A 500-level physiology course or equivalent and permission of instructor. Lectures, tutorial studies and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

PIO 691 (Section 3) Special Topics: Student Seminar. I, II. Semester course; 1 credit. Designed to develop skills in preparing and delivering lectures and other oral presentations. Students present talks on topics in which they are particularly interested, and provide mutual constructive criticism.

PIO 691 (Section 5) Special Topics: Nutrition Research. I. Semester course; 3 credits. Weekly discussion of selected topics in nutrition. Topics change yearly. Topics range from biochemical aspects of nutrition to International Nutrition, with selections from various levels of nutritional interest presented each year. Past topics have included nutrition and exercise, diet and cancer, total parenteral nutrition, alcohol nutrition, food safety, drug-nutrient interactions, nutrition and immunological response, cholesterol and nutrition, salty taste mechanisms, vitamin A, vitamin D, and intestinal calcium absorption.

PIO 697 Directed Research in Physiology. I, II. S. Semester course; 1-15 credits. Research leading to the MS or PhD degree and elective research projects for other students.

Courses in Pharmacology and Toxicology

PMC 400 Drugs and their Actions. II. Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior or senior or permission of instructor. This course is a general survey of pharmacology and related disciplines. The history and basic principles are presented followed by dis-

ussions of neuro-pharmacology, psychoactive drugs, drugs of abuse, immunopharmacology, basic toxicology, drug design, drug development, autonomic pharmacology, cardiovascular pharmacology, and endocrine pharmacology, as well as selected topics including scientific ethics, molecular pharmacology, and behavioral pharmacology.

PMC 441 Pharmacology (Dental Hygiene). Semester course; 5 lecture hours. 5 credits. A didactic course designed to emphasize the principles of pharmacology and pain control and the rationale of drug actions, uses, and adverse effects.

PMC 509/ANA 509/PIO 509 Introduction to Neuroscience. I. Semester course; 3 lecture hours. 3 credits. Prerequisites: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

PMC 515 Pharmacology for Nurse Anesthetists. I. Semester course; 3 lecture hours. 3 credits. The basic principles of pharmacology including mechanisms of absorption, distribution, biotransformation, elimination, dose-response relationships, drug and receptor interactions are presented followed by a detailed discussion of autonomic, cardiovascular, and renal pharmacology as it relates to nurse anesthesia. Detailed presentation of the pharmacology of classes of drugs used by nurse anesthetists will be made, with emphasis on general anesthetics.

PMC 516 Pharmacology for Nurse Anesthetists. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 515. Continuation of PMC 515. Detailed presentation of the pharmacology of classes of drugs used or encountered by nurse anesthetists will be made with emphasis upon local anesthetics, cardiovascular, chemotherapeutic, and anti-inflammatory agents.

PMC 535 Introduction to Toxicology. II. Semester course; 4 lecture hours. 4 credits. The basic principles of toxicology and toxicological evaluations; correlations of toxicological responses with biochemical, functional and morphological changes; environmental (including occupational and public health), forensic and regulatory concerns; and risk assessment and management are presented for graduate students in the biomedical sciences.

PMC 536 Principles of Pharmacology and Toxicology. I. Semester course; 5 lecture hours. 5 credits. Prerequisites: PIO 501 and BIC 503 or permission of instructor. A comprehensive course in pharmacology for graduate students. The mechanisms of action of major classes of pharmacologically active agents and basic principles of pharmacology are discussed. Topics include drug absorption, distribution, and metabolism; chemotherapy; endocrine pharmacology and principles of toxicology/immunotoxicology.

PMC 537 Principles of Pharmacology and Toxicology. II. Semester course; 5 lecture hours. 5 credits. Prerequisites: PMC 536 or with permission of instructor. Continuation of PMC 536. Topics include receptor theory, autonomic, cardiovascular, and central nervous system pharmacology and toxicology.

PMC 548 Drug Dependence. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: Graduate or post-baccalaureate standing. A broad survey course in problems of drug and alcohol use and abuse. It will focus on the pharmacology of abused drugs as well as a study of the psychological and sociological factors in drug-taking behavior, rehabilitation methods, and prevention. This course may not be taken in lieu of any pharmacology offerings in the professional schools on the MCV Campus.

PMC 597 Introduction to Pharmacological Research. I, II. Continuous course; 1-12 credits. Prerequisite: Permission of instructor. Rotation research in pharmacology and toxicology laboratories for beginning graduate students.

PMC 603 Principles of Pharmacology (Pharmacy). Semester course; 3.5 lecture and 2 laboratory hours. 4.5 credits. The basic prin-

ples of pharmacology and an in-depth consideration of the biodisposition and mechanisms of action of these agents. Drugs acting on the autonomic nervous system, chemotherapeutic agents, and endocrine agents are covered this semester.

PMC 604 Pharmacological Agents (Pharmacy). Semester course; 3 lecture hours. 3 credits. Includes drugs acting on the cardiovascular and central nervous system and principles of toxicology. (This is a continuation of PMC 603).

PMC 609 General Pharmacology and Pain Control. I, II. Continuous course; 2 lecture hours per week for 2 semesters. one grade for 4 credits at end of second semester. The basic principles of pharmacology, including mechanisms of absorption, distribution, biotransformation, elimination; dose-response relationships, drug-receptor interactions are presented followed by detailed discussions of the various classes of drugs, with special consideration given to mechanisms of action and toward effects of drugs used in dentistry to control pain and related symptoms.

PMC 611 General Pharmacology and Pain Control. I. Semester course; 2 lecture hours. 2 credits. A continuation of PMC 609.

PMC 620/PIO 620 Ion Channels in Membranes. II. (Alternate years beginning Spring 1999.) Semester course; 3 lecture hours. 3 credits. Detailed presentation of the fundamental biophysical properties of ionic channels in membranes including the elementary properties of pores, molecular mechanisms of ionic selectivity, mechanisms of drug block, structure-function relationships, and basis for channel gating. Discussion will encompass modern techniques for studying ion channel function. Previous course work including basic concepts in electrophysiology, such as those covered in PIO 501 Mammalian Physiology or PMC/PIO/ANA 509 Introduction to Neurosciences, is highly recommended.

PMC 625 Biochemical Pharmacology. I (Alternate years Fall 1998). Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 536 or consent of instructor. Covers biomedical and molecular biology approaches to pharmacological problems. Emphasizes signal transduction, oncogenes, protein kinases and the control of cellular proliferation. Examines uptake, metabolism and intracellular effects of anticancer drugs, particularly the interaction with DNA.

PMC 632 Neurochemical Pharmacology. II (Alternate years Spring 1999). Semester course; 3 lecture hours. 3 credits. Prerequisites: PMC 536 or consent of instructor. Investigates the mechanisms of drugs acting on the central nervous system in relation to their effects on endogenous neurochemical systems. Examines the milieu in which drugs act upon the central nervous system, experimental techniques frequently used in neuropharmacology, specific neurotransmitter systems, as well as the mechanisms of action of specific drugs.

PMC 633 Behavioral Pharmacology. I (Alternate years Fall 1999). Semester course; 3 lecture hours. 3 credits. This is a survey course covering research on the effects of drugs on behavior. The major emphasis will be on schedule-controlled learned behavior. Additional topics will include drug self-administration, drug discrimination, and conditioned drug effects and behavioral toxicology. The course focuses primarily on laboratory research in animals although human research will also be covered. The relevance of this research literature to drug treatment of behavioral disorders and substance abuse will be discussed.

PMC 637 Cellular Pharmacology. II (Alternate years Spring 1998). Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 536 or permission of instructor. The principles governing the interactions of drugs and hormones with their cellular receptors are presented followed by a discussion of the biochemical mechanisms by which the interactions are transduced into specific cellular responses. Lectures are supplemented with demonstrations and student presentations of current literature in the area.

PMC 638 Cellular Mechanisms of Toxicology. II. (Alternate years Fall 1999). Semester course; 3 lecture hours. 3 credits. Prerequisite: PMC 536 or permission of instructor. A holistic approach is taken to describe and analyze toxicological information. Intact animal, organ, cellular, and biochemical responses to toxic agents are presented. Immunologic, genetic, endocrine, and central nervous system paradigms and their

relationship to the mechanism of action of toxic agents as well as the predictive value of tests of these systems are presented. Kinetics and metabolism of toxic agents as well as statistical and analytical procedures are integrated into the discussions.

PMC 639 Drug Development. I (Alternate years Fall 1998). Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: PMC 536 and 537 or their equivalents. The principles of drug screening, advanced testing, and procedures necessary prior to the clinical evaluation of new products are described. An emphasis is placed on physiological type procedures used in pharmacology.

PMC 644 Forensic Toxicology. II (Alternate years Spring 1998). Semester course; 2 lecture and 2 laboratory hours. 3 credits. Lecture and demonstrations in which common poisons and groups of poisons are discussed as to detection, diagnosis, and treatment of poisoning. Demonstrations include basic principles of analytical toxicology, forensic science, and courtroom testimony.

PMC 690 Pharmacology Research Seminar. I, II. Semester course; 1 lecture hour. 1 credit. Members of the departmental staff, students, and visiting lecturers participate in discussions on topics of current and historical interest.

PMC 691 Special Topics in Pharmacology. I, II, S. Semester course; 1-4 credits. Prerequisite: Permission of instructor. Special topics in pharmacology or toxicology covered in less detail in other courses will be studied in depth in this course.

PMC 697 Directed Research in Pharmacology. I, II, S. Semester course; 1-15 credits. Research leading to the MS or PhD degree and elective projects for other students.

Courses in Preventive Medicine and Community Health

PMH 511-512 Basic Industrial Hygiene I and II. I, II, and S. Semester course; 3 lecture hours. 3 credits. Basic concepts including: epidemiology, industrial toxicology, biological monitoring dermatosis, sampling strategy, solvents, particulates, respiratory protection, ventilation, sound, heat stress, radiation, ergonomics, special topics, and the regulatory aspects.

PMH 521 Regulation of Toxic Substances. I. Semester course; 3 lecture hours. 3 credits. This course introduces the student to the administrative law and policy issues. This course examines the Clean Water Act, Clean Air Act, Resources Conservation & Recovery (RCRA), Federal Facility Compliance Act, Comprehensive Environmental Response, Compensation & Liability Act (CERCLA-Superfund), Toxic Torts; Real Estate Issues; Recovery of Money Damages; Criminal Law, Occupational & Mine Safety & Health Acts (OSHA/MSHA), Workman's Compensation; Occupational Disease; Victim Compensation, Safe Drinking Water Act; Pollution Prevention Act, Food Drug & Cosmetic Act, RCRA & Superfund Regulations & Case Law; State Hazwaste/Superfund Programs, Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA); Lead Based Paint Poisoning Prevention Act, Radiation Law & Regulation; Transportation, Marine Sanctuaries Act; International Environmental Law.

PMH 531/BIS 531 Clinical Epidemiology. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Must have completed statistics course before being given permission to take epidemiology course with permission of instructor. A survey course which focuses on the concepts of epidemiology and its role in risk assignment. This course will distill the underlying theory and the principles used by epidemiologist. The course will introduce the sources and uses of vital data, their conversion into morbidity and mortality rates and indices. Procedures such as age standardization and abridged life table will be introduced, as will concepts of disease transmission, epidemiology and various summary statistics. The Surgeon General's criteria for causation will be examined, designs in epidemiological research reviewed, and the use and limitations for epidemiological data in risk assessment described. Students should have a current VAX account and some background in mathematics and elementary statistics.

PMH 541 Principles of Waste Management. I. Semester course; 3 lecture hours. 3 credits. Design and operation of waste treatment, storage, disposal and control processes will be covered. Design tanks, landfills, and incinerators will be discussed in detail. Data acquisition and interpretation methods needed for process control and monitoring will be examined.

PMH 543/BIS 543/STA 543 Statistical Methods I. I. Semester course; 3 lecture hours. 3 credits. Prerequisite: Graduate status or one course in statistics with permission of instructor. Basic concepts of statistical methods, statistical measures, variation, distribution, tests of significance, analysis of variance, correlation and regression; analysis and design of factorial experiments; analysis of covariance.

PMH 571/NUR 571 Principles of Epidemiology. I. Semester course; 2 lecture hours and 1 seminar. 3 credits. Offers the theoretical foundation for understanding the health problems and needs of American society and uses scientific and social knowledge to examine factors that cause and alter the course of health problems in selected populations.

PMH 583 Industrial Ventilation. I. Semester course; 3 lecture hours. 3 credits. Principles of design and evaluation of local exhaust systems. Principles of airflow, characteristics of pressure losses, and selection of air cleaners and air moving.

PMH 600 Introduction to Public Health I, II. I, II. Semester course; 3 lecture hours. 3 credits. Describes the public health system in the United States. Explores the disease prevention and philosophy and foundations of public health management, economics, law, ethics and education. Examines the use of epidemiology and statistics to determine personal, environmental, and occupational health problems.

PMH 602/HAD 602 Health Care Organization and Services. I. Semester course; 2 lecture hours and 1 seminar. 3 credits. The primary objective of the course is to provide students with a broader view of the U.S. health care system, and the political and social environment in which it exists. This perspective is essential for future administrators if they are to be effective in both directing their organizations in the public interest, from a variety of perspectives. Knowledge from sociology, economics, political science and epidemiology will be introduced into the course for the purpose of providing conceptual bases necessary for analyzing developments and issues in the health care field.

PMH 603 Public Health Policy and Politics. II. Semester course; 3 lecture hours. 3 credits. Provides an understanding of the public health policy development process, the influence of politics and special interest groups on this process, and current governmental policies for the provision of major public health services. The legislative process is a major focus of the course.

PMH 604 Principles of Occupational and Environmental Health II. II. Semester course; 3 lecture hours. 3 credits. Basic principles of occupational and environmental health are presented, with emphasis on biological, chemical, and physical factors that influence human health. Current workplace and public health safety and regulatory issues are emphasized.

PMH 605 Survey of Public Health Behavior. I, II. Semester course; 3 lecture hours. 3 credits. An overview of psychosocial, cultural, demographic, economic and other related behavioral factors, associated with health, morbidity, disability, and mortality, with special reference to behavior relevant to the public health domain. Areas covered will include selected theory and research findings from the behavioral sciences and behavioral epidemiology, research methods and techniques, and evaluation methods for behavioral interventions in public health.

PMH 606 Epidemiologic Methods II. II. Semester course; 3 lecture hours. 3 credits. Examines the why and hows of determining major population health risks. Focuses on the design of a research project to determine the risks to health of an identified population using sampling and survey techniques, data collection, and data analysis.

PMH 607 Nutritional Epidemiology. II. Semester course; 3 lecture hours. 3 credits. This course focuses on methods of measuring exposures to dietary factors for epidemiological investigations of diet-disease relationships and risk assessment. An introductory course in

basic epidemiology is a prerequisite. Students learn to select the most appropriate method(s) of collecting and analyzing food intake and to evaluate the adequacy of dietary assessment methods used in published epidemiological studies.

PMH 615 Public Health Issues and Interventions in Communities of Color. I. Semester course; 3 lecture hours. 3 credits. This course is an overview of many critical psychological, social, cultural, demographic, biological, and other factors which influence lifestyle and disease susceptibility among minority status ethnic groups and other medically underserved populations in the United States. A lecture/discussion seminar format will be used, along with readings, student presentations and guest lecturers working in the field, to: (1) improve the students' understanding of the underpinnings of health status differences across communities; and (2) provide students with tools which can be used in developing effective interventions to address the maldistribution of health risk behavior and disease burden.

PMH 616 Public Health Education. II. Semester course; 3 lecture hours. 3 credits. Provides the student with an examination of theory and practice of public health education. This examination represents an overview of selected topics that are congruent to the Responsibilities and Competencies for Entry-Level Health Educators. Specifically, course content will be centered around assessing individual and community needs for health education programs, coordinating provision of health education services, acting as a resource person in health education, and communicating health and health education needs, concerns, and resources.

PMH 617 International Health. I, II. Semester course; 3 lecture hours. 3 credits. Provides an overview of and/or introduction to international health. Focus is on the relationship between external factors and the health of populations.

PMH 618 Public Health Law. I. Semester course; 3 lecture hours. 3 credits. Provides the student with the structure of the legal system and statutes and regulations governing state and local health departments. This course examines the federal public health laws, medical malpractice, privacy and confidentiality issues, mental health laws, abortion and sterilization, patients rights, emergency medical care law, human experimentation, rights of the terminally ill, AIDS law, occupational and environmental health law, and health planning and reimbursement law.

PMH 619 Intentional Injury. S. Semester course; 3 lecture hours. 3 credits. Examines the number, distribution, and impact of intentional injuries in the United States, as well as some of the crucial psychological, social, cultural, demographic, economic, biological, and other factors associated with their cause, control, and prevention. Through lectures and dialogue, expert panels, student presentations, reading, and other assignments, students are expected to become acquainted with theory and research findings from the behavioral sciences, behavioral epidemiology, public health, and other sources which are likely to contribute to: (1) a greater comprehension of the magnitude and complexities of violence and intentional injuries in American life and (2) advancements in our capacity to successfully confront this epidemic with public health and related measures.

PMH 691 Special Topics (Nutrition Research). I. Semester course; 2 lecture hours. 2 credits. This course consists of weekly discussions of selected topics in nutrition led by the faculty plus an assigned paper and presentation at the end of the semester by each student. The topics to be presented by the faculty include: Food Safety, The Aspartame Example; Diet, Nutrition and Cancer; Exercise and Nutrition; The Vitamin A Story; The FDA and Food Safety; Nutrition and GI Motility; Nutrition Assessment Techniques; Nutrition of the Critically Ill; The Vitamin D Story; Cholesterol Nutrition; Nutrition and Wound Healing; How Salty Taste Works; Stable Isotopes in Nutrition Studies.

PMH 691 Program Research Project. I, II, and S. Semester course; 9 clinical hours. 3 credits. Focuses on practice and research roles within public health. Provides students the opportunity to work collaboratively with state and local public health agencies and professionals in meeting specific population needs. Community health and issues pertaining to populations at risk are primary areas of interest for students enrolled.

Department of Anatomy

John T. Povlishock

Professor and Department Chair (1973) BS 1969 Loyola College; MS 1971 and PhD 1973 St. Louis University

- Astruc, Juan A. (1967) *Professor* MD 1957 and PhD 1959 University of Granada, Spain
- Bigbee, John W. (1982) *Associate Professor* BA 1971 and MA 1974 Humboldt State University; PhD 1982 Stanford University
- Bogler, Oliver (1997) *Assistant Professor* BA 1988 Cambridge University; PhD 1991 Ludwig Institute
- Boudreau, Nancy (1996) *Assistant Professor* BS 1981 Dalhousie University; MS 1984 Halifax NS; PhD 1991 University of Toronto
- Colello, Raymond J. (1996) *Professor* BS 1980 Western Illinois University; PhD 1990 Oxford University
- Coulter, Douglas A.* (1990) *Associate Professor of Anatomy and Neurology* BS 1980 Trinity College; MS 1983 University of Rhode Island; PhD 1987 Boston University
- Goldberg, Stephen J. (1973) *Professor* BA 1965 Antioch College; PhD 1971 Clark University
- Haar, Jack L. (1971) *Professor and Dean, School of Graduate Studies* BS 1964 Capital University; MS 1966 University of Arizona; PhD 1970 Ohio State University
- Johnson, James H. (1971) *Professor* BA 1966 University of Northern Iowa; PhD 1970 University of California, Los Angeles
- Krieg, Richard J., Jr. (1975) *Professor* BS 1967 University of San Francisco; MS 1969 and PhD 1975 University of California, Los Angeles
- Leichnetz, George R. (1970) *Professor* BS 1964 Wheaton College; MS 1966 and PhD 1970 Ohio State University
- Matt, Dennis W.* (1986) *Associate Professor of Anatomy and Obstetrics and Gynecology* AB 1975 Rutgers University; MS 1979 and PhD 1983 Rutgers University
- Mayer, David J.* *Professor of Anatomy and Anesthesiology*
- McClung, John Ross (1974) *Associate Professor* BS 1966 Auburn University; PhD 1971 University of Texas
- Merchant, Randall E. (1982) *Professor* BA 1973 St. Mary's College; MS 1976 and PhD 1978 University of North Dakota
- Meredith, M. Alex (1983) *Associate Professor* BA 1975 Wake Forest University; MA 1978 Johns Hopkins University; PhD 1981 Virginia Commonwealth University
- Newsham, Irene F. (1997) *Assistant Professor* BS 1982 University of Vermont; PhD 1988 Massachusetts Institute of Technology
- Ramao, Ary S. (1993) *Assistant Professor* MD 1979 and MS 1981 University of Rio De Janeiro, Brazil; PhD 1986 University of California, Berkeley
- Reeves, Thomas M. (1994) *Assistant Professor* BA 1976 Sangamon State University; MA 1978 Sangamon State University; PhD 1983 Southern Illinois University
- Seibel, Hugo R. (1967) *Professor and Associate Dean for Student Affairs, School of Medicine* BS 1960 Brooklyn College; PhD 1967 University of Rochester
- Shall, Mary Snyder*
- Sholley, Milton M. (1976) *Professor* BS 1969 Mehlenberg College; PhD 1974 Temple University
- Spencer, Robert F. (1977) *Professor* BS 1971 Boston University; PhD 1974 University of Rochester
- Szagal, Andras K. (1979) *Professor* BA 1961, BS 1963 and MA 1963 University of Colorado; PhD 1972 University of Tennessee

Emeriti Faculty

- Craig, Shirely *Professor Emerita*
- Geeraets, Ragnit E. *Associate Professor Emerita*
- Harris, Thomas M. *Professor Emeritus* BA 1949 Emory University; PhD 1962 University of North Carolina
- Hegre, Erling S. *Professor Emeritus* BA 1931 Luther College; MS 1941 and PhD 1942 University of Minnesota
- Jollie, William P. *Professor Emeritus* BA 1950 and MS 1952 Lehigh University; PhD 1959 Harvard University

Affiliate Faculty

- Ruth Clemo Mary D. Ellison
- Jeffery Taubenberger

* Joint or secondary appointment

Banks, William L., Jr. (1965) *Professor of Biochemistry and Molecular Biophysics and Surgery* BS 1958 Rutgers University; MS 1961 Buchnell University; PhD 1963 Rutgers University

Bieberich, Erhard (1996) *Instructor* BS 1986 University of Cologne; PhD 1990 University of Cologne

Broga, Dean W.* (1975) *Associate Professor of Biochemistry and Molecular Biophysics and Radiology and Director, Environmental Health and Safety* BS 1974 Lowell Technological Institute; MS 1976 University of Lowell; PhD 1983 University of Virginia

Chan, James C.* (1977) *Professor of Biochemistry and Molecular Biophysics and Pediatrics and Chair, Division of Pediatric Nephrology* CM 1964 and MD 1964 McGill University

Chlebowski, Jan F. (1979) *Professor and Associate Dean, School of Medicine* BA 1965 St. Mary's College; PhD 1969 Case Western Reserve University

Clore, John N.* (1988) *Associate Professor of Biochemistry and Molecular Biophysics and Internal Medicine* BS 1976 and MS 1977 Virginia Commonwealth University; MD 1982 Medical College of Virginia of Virginia Commonwealth University

Collins, James M. (1969) *Professor* BS 1962 University of Southern Mississippi; PhD 1968 University of Tennessee

Delorenzo, Robert* *Professor of Biochemistry and Molecular Biophysics and Neurology*

Diegelmann, Robert F.* (1972) *Professor of Biochemistry and Molecular Biophysics and Surgery* PhD 1970 Georgetown University

Franson, Richard C. (1975) *Professor and Director, Technology Transfer* BS 1965 University of Massachusetts; MS 1970 and PhD 1972 Wake Forest University, Bowman Gray School of Medicine

Ghosh, Shobha (1987) *Assistant Professor* BS 1977 University of Jodhpur; PhD 1985 Indian Institute

Gil, Gregorio (1997) *Associate Professor* BS 1977, MS 1978 and PhD 1981 University of Barcelona

Graham, Martin F.* (1980) *Professor of Biochemistry and Molecular Biophysics and Pediatrics* MD 1973 and MB ChB 1973 University of Capetown, South Africa

Grogan, William McLean, Jr. (1975) *Professor* BS 1967 Belmont College; PhD 1972 Purdue University

Hibbert, Jacqueline M.* (1992) *Assistant Professor of Biochemistry and Molecular Biophysics and Surgery* BS 1975 University of the West Indies, Jamaica; MS 1977 and PhD 1989 University of the West Indies

Hylemon, Phillip B.* (1972) *Professor of Biochemistry and Molecular Biophysics and Microbiology and Immunology* BS 1967 Atlantic Christian College; PhD 1971 Virginia Polytechnic Institute and State University

Kirby, Donald F.* (1985) *Professor of Biochemistry and Molecular Biophysics and Internal Medicine* BS 1975 and MD 1979 George Washington University

Liberti, Joseph P. (1967) *Professor* BS 1959 Fairleigh Dickson University; MS 1962 and PhD 1964 Loyola University

Peterson, Darrell Lynn (1978) *Professor* BS 1966 and PhD 1970 University of Notre Dame

Rizzo, William B.* (1982) *Professor of Biochemistry and Molecular Biophysics and Pediatrics* BA 1972 Northwestern University; MD 1977 University of Illinois

Roesser, James R. (1993) *Assistant Professor* BS 1982 Rensselaer Polytechnic Institute; PhD 1986 University of Virginia

Sato-Bigbee, Carmen (1997) *Assistant Professor*

Scarsdale, J. Neel (1988) *Assistant Professor* BS 1982 University of Arkansas; PhD 1989 Yale University

Schirch, LaVerne G. (1978) *Professor* BS 1958 Bluffton College; PhD 1963 University of Michigan

Shelton, Keith R. (1970) *Professor* BA 1963 University of Virginia; PhD 1968 University of Illinois

Van Tuyle, Glenn Charles (1974) *Associate Professor* AB 1965 Lafayette College; PhD 1972 Thomas Jefferson University

Wolf, Barry* (1978) *Professor of Biochemistry and Molecular Biophysics and Human Genetics* BS 1969, MD 1974 and PhD 1974 University of Illinois

Wright, Christine S. (1980) *Professor* BS 1965 University of Indiana; PhD 1969 University of California, San Diego

Wright, H. Tonie (1980) *Professor* AB 1963 Princeton University; PhD 1968 University of California, San Diego

Zehner, Zendra E. (1983) *Professor* BA 1969 Bradley University; MS 1972 University of Houston; PhD 1979 Baylor University

Zeng, Gui-Chao (1992) *Assistant Professor* BS 1968 and MS 1980 Peking University, China; PhD 1984 McGill University

Emeriti Faculty

Abbott, Lynn D., Jr. *Professor Emeritus* BS 1936 Wayne State University; MS 1937 Wayne State University; PhD 1940 University of Michigan

Brandt, Richard B. *Professor Emeritus* BS 1956 Queens College; MS 1960 Brooklyn College; PhD 1968 New York University

Freer, Richard J. *Professor Emeritus* BS 1964 Marist College; PhD 1969 Columbia University

Higgins, E. Stanle *Professor Emeritus* BA 1952 Alfred University; PhD 1956 State University of New York, Syracuse

Rogers, Kenneth S. *Associate Professor Emeritus*

Affiliate Faculty

David M. Anderson	David Lee Cochran
David O. Cooper	George H. Devries
Raymond S. Dominey	Jose M. Gonzalez-Ros
Robert B. Harris	Akira Hasegawa
Regina M. Knight	Tadashi Miyatake

* Joint or secondary appointment

Department of Biostatistics

Walter H. Carter, Jr.

Professor and Chair (1968) BS 1963 University of Richmond; MS 1966 and PhD 1968 Virginia Polytechnic Institute and State University

Adera, Tilahun* (1994) *Assistant Professor of Biostatistics and Preventive Medicine and Community Health* PhD 1987 Oregon State University

Barnes, Thomas Y. (1989) *Research Assistant* BS 1974 University of Richmond; MS 1976 Medical College of Virginia of Virginia Commonwealth University

Borberg, Victor E.* *Assistant Professor*

Boyle, Russell M. (1975) *Instructor* BA 1972 Indiana University; MA 1975 University of Akron

Campbell, Eleanor D. (1959) *Research Assistant* BS 1959 University of Richmond; MS 1975 Medical College of Virginia of Virginia Commonwealth University

Choi, Sung C. (1978) *Professor* BS 1957 and MA 1960 University of Washington; PhD 1966 University of California, Los Angeles

Elswick, Ronald K. (1988) *Assistant Professor* BS 1981 Radford University; PhD 1985 Medical College of Virginia of Virginia Commonwealth University

Gennings, Chris (1983) *Associate Professor* BA 1982 University of Richmond; PhD 1986 Medical College of Virginia of Virginia Commonwealth University

Kilpatrick, S. James, Jr. (1965) *Professor* BS 1954, MS 1957 and PhD 1960 Queens University of Belfast, United Kingdom

Ko, Daijin (1985) *Associate Professor* BS 1974 and MS 1977 Yonsei University, Korea; MS 1982 and PhD 1985 University of Washington

Lu, I-Li (1993) *Assistant Professor* BS 1983 University of Wisconsin, LaCrosse; MA 1987 and PhD 1991 University of Virginia

McClish, Donna K. (1988) *Associate Professor* BA 1972 University of Michigan; MA 1973 University of Michigan; PhD 1979 University of North Carolina, Chapel Hill

Shaw, James E.* *Assistant Professor*

Smith, Wally R.* *Associate Professor*

Wolfe, Luke G.* (1982) *Instructor of Biostatistics and Surgery* BA 1980 Bridgewater College; MS 1982 Medical College of Virginia of Virginia Commonwealth University

Emeriti Faculty

Keefe, William E. *Associate Professor Emeritus* BS 1959 and MS 1964 Virginia Polytechnic Institute and State University; PhD 1967 Medical College of Virginia

Affiliate Faculty

Richard Carchman	Vernon M. Chinchilli
Kathryn Dawson	Roger E. Flora
Charles W. Kish, Jr.	Karl Peace

* Joint or secondary appointment

Department of Dermatology

Algin B. Garrett

Associate Professor and Chair (1983) BS 1974 Bucknell University; MD 1978 Pennsylvania State University

Nunley, Julia (1996) *Instructor* BS 1979 Purdue University; MD 1983 Case Western Reserve University
Wallace, Michael L.* *Assistant Professor*

Emeriti Faculty

Blaylock, W. Kenneth *Professor Emeritus* BS 1953 King College; MD 1958 Medical College of Virginia
Rothberg, Simon *Professor Emeritus* BS 1948 Columbia University; MS and PhD 1956 Georgetown University

Clinical Faculty

Lawrence Blanchard	Jerry C. Booth
Sharon S. Camden	Charles M. Caravati
Richard B. Fohl	Earl M. Hudgins
Georgia Kannon	L. Williams Kelly
Eileen C. Kitces	Yvonne Knight
Hazle S. Konerding	Francis McMullen
B. Thomas Reams	Robert B. Scoggins
Estelle I. Young	

Department of Emergency Medicine

Joseph P. Ornato

Professor and Chair (1985) AB 1965 and MD 1971 Boston University

Abd-Elfattah, Anwar S.* *Professor*
Albanna, Suzanne E. *Assistant Professor*
Bar-on, Miriam E.* (1991) *Associate Professor of Emergency Medicine and Pediatrics* BS 1977 University of Michigan; MD 1982 Hahnemann University
Chuidian, Frances X. *Assistant Professor*
Cisek, James E. *Associate Professor*
Cohen, Brian K. *Assistant Professor*
Derco, Keith A.* (1995) *Assistant Professor of Emergency Medicine and Pediatrics* BS 1973 and MD 1977 University of Pittsburgh
Dolan, Margaret A.* (1993) *Associate Professor of Emergency Medicine and Pediatrics* BS 1970 College of Mount St. Joseph-on-the-Ohio; MD 1981 Case Western Reserve University
Evans, Timothy C. *Assistant Professor*
Foster, Robin L.* (1996) *Assistant Professor of Emergency Medicine and Pediatrics* BS 1985 College of William & Mary; MD 1989 Medical College of Virginia of Virginia Commonwealth University
Galaska, Piotr N. *Assistant Professor*
Gonzalez, Edgar* *Associate Professor*
Gonzalez, Michael S. *Assistant Professor*
Gonzalez, Stephanie M. *Assistant Professor*
Kazanov, Leonard A. *Assistant Professor*
Klinker, Nora A. (1997) *Assistant Professor* MD 1992 West Virginia University
Kontos, Michael C.* (1991) *Assistant Professor of Emergency Medicine, Internal Medicine and Cardiology* MD 1983 Medical College of Virginia of Virginia Commonwealth University
Liner, Steven R.* (1993) *Associate Professor of Emergency Medicine and Pediatrics* BA 1967 Rutgers University; MS 1972 Rutgers University; MD 1977 College of Medicine and Dentistry of New Jersey
Marks, Lee Malcolm (1996) *Assistant Professor* BS 1976 Brown University; MD 1993 University of Cleveland
McKeith, James John (1996) *Assistant Professor* BS 1984 University of California; MD 1992 Jefferson Medical School
Muniz, Antonio E. *Assistant Professor*
Nelson, David*
Rose, Samuel Rutherford *Associate Professor*
Savas, Jeannie F.*
Smith, Tabathia *Assistant Professor*
Tadler, Scott C. *Assistant Professor*

Clinical Faculty

Mobashar Ahmed	Amy Ann Americo
Sumeera Baig	Zahid Baig

Doumit Bouhaider	Joe Pat Caldwell
Richard Chen	Diana Crevi
Bernard Dannenberg	Ekundayo Falase
Gary Galesh	Jason Garrison
Pedro Giron	Mondaar Gokhale
Brad Goldman	Edgar Gonzalez
Paul Gourley	Kevin Greer
William Hauda	John Hong
A. Mariano Ibarrola	Scott Jones
Patrick Jordan	Bahram Kakavand
Rita Manfredi	Shawn McLane
Jon Peterson	Carlos Picone
Ivan Ramirez	Renee Reid
Lawrence Satkowsk	Robert C. Satonik
Mahendra Shah	Vipul Shelat
Laurie Shinn	Randy Shiraishi
Nathan Watemberg	Julia Whiting
Dean C. Williams	Thomas Yeh, Jr.

* Joint or secondary appointment

Department of Family Practice

David W. Marsland

Professor and Chair (1973) AB 1963 Clark University; MD 1967 Union University

Booker, Corliss V. (1992) *Assistant Professor*
Bryan, Daphne L. (1995) *Assistant Professor* BS 1986 Howard University; MD 1990 Medical College of Virginia of Virginia Commonwealth University
Burgett, Amy E. (1995) *Assistant Professor* Diploma 1966 AOMH; BS 1981 St. Cloud State
Coleman, George C. (1993) *Associate Professor* BS 1977 College of William & Mary; MD 1981 Medical College of Virginia of Virginia Commonwealth University
Gary, Judy S. (1992) *Assistant Professor* BS 1983 Virginia Commonwealth University; MEd 1989 University of Virginia
Harris, James S. (1995) *Associate Professor* BA 1953 Hampden-Sydney College; MD 1960 University of Virginia
Jeter, Carolyn R. (1990) *Assistant Professor* BS 1984 Virginia Commonwealth University
Kuzel, Anton J. (1990) *Associate Professor* BS 1977, MD 1981 and MHPE 1985 University of Illinois
MacIntyre, Pamela (1993) *Assistant Professor* BSED 1968 Wheelock College; MEd 1970 Boston University; MS 1995 Virginia Commonwealth University
McIwaine, Benjamin H. (1995) *Associate Professor* BS 1971 Hampden-Sydney College; MD 1975 Medical College of Virginia of Virginia Commonwealth University
Munson, Paul J. (1973) *Professor* BA 1965 Gordon College; MEd 1968 Salem State College; EDD 1970 University of Virginia
Nelson, David *Assistant Professor*
Olchanski, Vladislav (1992) *Instructor* MS 1969 and PhD 1974 Moscow Institute
Peel, Carolyn (1996) *Assistant Professor* BS 1988 College of William & Mary; MD 1992 Medical College of Virginia of Virginia Commonwealth University
Rosenbaum, Charles I. (1995) *Associate Professor* BS 1980 College of William & Mary; MD 1984 Medical College of Virginia of Virginia Commonwealth University
Rothenich, Stephen F. (1996) *Associate Professor* BS 1985 Lynchburg College; MD 1989 Medical College of Virginia of Virginia Commonwealth University
Spence, Steven N. (1995) *Associate Professor* BA 1973 and MD 1977 University of Virginia
White, Stuart B. (1995) *Associate Professor* BS 1953 Hampden-Sydney College; MD 1957 Medical College of Virginia
Whitehurst-Cook, Michelle Y. (1993) *Associate Professor* BS 1975 College of William & Mary; MD 1979 Medical College of Virginia of Virginia Commonwealth University

Emeriti Faculty

Mayo, Fitzhugh *Professor Emeritus* BS 1947 Virginia Polytechnic Institute and State University; MD 1955 Medical College of Virginia

Wood, Maurice *Professor Emeritus* MB 1945 and BS 1945 Durham University, United Kingdom

Clinical Faculty

Robert L. Agee, Jr.
James C. Anderson
John J. Ball
Mark Barr
Robert M. Bennett
Cynthia Bettinger
M. Lee Blackburn
Donald Bley
Susan H. Burroughs
Jameson Buston
David Callahan
Brian Carroll
Donald Carver
Jeanne Chiang
Craig C. Clark
Stephen Clement
Katherine J. Cole
Lina Sue Crowder
Jerome M. Daniel
Rebecca Davidson
Mark Davy
Lynne Deane
Gary Derosa
Roxanne Dietzler
Thomas Ehrlich
Paul Edward Evans
Walter J. Farrell
Kevin Fergusson
Michael A. Filak
J. Colin Forrester
Daniel P. Garfinkel
Linda Gilliam
Irving Gottfried
Christine Hagan
James Haring
Kenneth Heatwole
C. Randolph Hinson
Gregory Holmes
Wallace Horne
Thomas Hubbard
Charles Irwin
Norris Johnson
Yvette Johnson-Threat
Samuel M. Jones
Eugene Kastleberg
Kevin Keller
James W. Kentigh
Scott A. Kincaid
Carol L. Koenig
Jill A. Krafczyk
Brent Lambert
Daniel C. Lawrence
Deborah I. Leavens
James J. Ledwith
Barbara Lester
Richard G. Lewis
Kenneth Lucas
Sandra S. Mabry
Barbara Mackie
Ralph V. MacMillan
W. Jefferson McCarter
Jeff L. McLeod
Cynthia W. Merrill
James Miller
John Mills
George Mitchell
Thomas L. Moffatt
W. Phillip Morrisette
Frank R. Moyer
Richard Mugol
James Mumper
Richard F. Nanna

Theodore G. Aldhizer
Scott Armistead
John Barnes
Lorraine Beaulieu
Sonya N. Bethel
Anna Bittner
Thomas D. Blake
David Brown
Beverley G. Buston
Cesar Caballero
John T. Carmack
William H. Carter
Karen Chandler
Louis R. Chisholm
David A. Clark
Donn S. Cobaugh
Robert Cross
James R. Dageforde
Alan W. Dappen
Russell L. Davis
Lenore Day
Serge Depret-Guillaume
Parimal Desai
Janet M. Eddy
Mouline Etre
Robert B. Evans
Harold W. Felton
Anthony Fierro
Robert E. Foos
Anita Ganeshan
Nick J. Gettas
Anup J. Gokli
Pamela Gwathmey
Carolyn Harraway
Karen Ann Hearst
Marjorie A.L. Hermes
Richard H. Hoffman
Allen B. Horne
Frederick W. Hubach
Willoughby Hundley
James P. Jenkins
Robert W. Johnson
Jacob Jones
Cheryl Jordan
Barry L. Katchinoff
Daniel R. Kelly
John W. Kerns
John G. King
John P. Kowalski
Shane Kraus
Reed Lambert
David A. Layman
Steven S. Leblang
Joseph Leming
Augustine W. Lewis
Walter P. Lowery
Michael Robert Lustig
Nancy MacConnachie
Lora E. Mackie
Laurie Markin
Terence J. McCormally
Victoria L. Merkel
Mark Merritt
Susan Ann Miller
Ellen A. Mitchell
Patrick Mitchell
Barbara Moront
Morton L. Moss
David W. Muffelman
Kathleen Muiruri
Alicia Nacpil
Omi Narang

Robert J. Newman
Benjamin E. Norfleet
Beth Ann Omundsen
John T. Owen
Frederick W. Parker
Philip R. Peacock
Mark G. Petrizzi
William Phipps
John H. Pope
Barbara M. Prillaman
Wayne Quillin
Sterling Ransome
Stephen G. Read
Todd Reynolds
Alex Rizk
James Robusto
Rosemarie Rose
Frank S. Royal
Richard Safeer
Susan H. Satchwell
Harriet Schanzer
Jeffrey Schwartz
Sigmund P. Seiler
Michael Sheehan
Peter A. Sim
Stuart M. Solan
Ivia J. Somerville
Kirby Southall
David B. Stein
Thomas R. Stennett
Maura J. Sughrue
Randall Suslick
Michael Syptak
Eugene Temple
George Tran
Gloria Trujillo
Paul E. Turner
John W. Verheul
Lee Weathington
Rudolf B. Wenleder
Sherry Whisenant
Marvin T. Williams
Henry S. Willner
James L. Wise
David Wu-Pong
Walker P. Youngblood

David B. Nichols
Lynn M. O'Brien
Julie F. Overholzer
Susan D. Paige
James L. Patterson
Kathleen Petrizzi
Michael J. Petrizzi
Mary Piergallini
George W. Porter
G. V. Puster
Frank E. Ramsey
Sandra Ratterman
Louise Reynolds
Stephen Richard
Peter H. Robbins
Michele A. Romano
Mark J. Rosenberg
Martha Rumschlag
Frank Sasser
Edward Saylor
Susan Scharpf
Richard H. Schwartz
Robin C. Shealy
Michael A. Silverstein
Jerome D. Skaggs
Donald Elwood Soles
Al Southall
Charles Sparrow
Marie Steinmetz
John F. Strazzullo, III
Thomas S. Sullivan
Erik E. Swensson
Michael P. Taylor
Dennis Thomas
Frederick Troxel
June R. Tunstall
William T. Tweel
Jeffrey Waldman
Kevin M. Weaver
Robert M. Wheeler
James P. Wigand
Robert B. Williams
Richard Wineland
Steven H. Woolf
Donald Eric Yeatts
Edward A. Zakaib

Department of Human Genetics

Walter E. Nance

Chair and Professor of Human Genetics, Internal Medicine, and Pediatrics (1975) BS 1954 University of the South; MD 1958 Harvard University; PhD 1968 University of Wisconsin

- Bodurtha, Joann N. (1987) *Associate Professor* BA 1974 Swarthmore College; MD 1979 Yale University
- Brown, Judith A. (1975) *Professor of Human Genetics and Obstetrics and Gynecology* BA 1962 University of Maine; PhD 1970 Indiana University
- Corey, Linda A (1976) *Professor* BS 1970 St. Francis College; Ms 1972 and PhD 1974 North Carolina State University
- Eaves, Lindon J. (1981) *Professor* BS 1966 University of Birmingham, England; PhD 1970 University of Birmingham, England; MA 1979 Oxford University, England; DSC 1980 University of Birmingham, England
- Foley, Debra L. (1994) *Instructor* PhD 1992 La Trobe University
- Hymes, Anthanetta J. (1969) *Research Associate* BS 1962 Fairmont State University; MS 1965 and PhD 1967 West Virginia University
- Jackson-Cook, Colleen K. (1983) *Assistant Professor* BS 1978 University of Charleston; MS 1980 West Virginia University; PhD 1985 Medical College of Virginia of Virginia Commonwealth University
- Lloyd, Joyce A. (1991) *Assistant Professor* BS 1982 University of Connecticut; PhD 1987 Wesleyan University
- Maes, Hermine H.M.J.L. (1992) *Instructor* PhD 1992 Katholieke University

Ming, Zhu (1997) *Research Associate*
 Murrelle, Edward Lennon (1995) *Research Associate* BA 1984 Wake Forest University; MSPH 1992 University of North Carolina, Chapel Hill; PhD 1995 University of Pittsburgh
 Pandya, Arti (1991) *Assistant Professor* HSC 1977 Jai-Hind College; MBBS 1982 Seth GS Medical; MD 1985 KEM Hospital
 Phelps, Lorna M. (1992) *Lecturer* BA 1977 Goucher College; MSSW 1982 University of Wisconsin
 Rasul, Iftekhar (1990) *Instructor* MSS 1983 University of Dhaka; MBA 1989 Virginia Commonwealth University
 Rizzo, William B.* (1982) *Professor of Human Genetics and Pediatrics* BA 1972 Northwestern University; MD 1977 University of Illinois
 Shiang, Rita (1997) *Assistant Professor*
 Silberg, Judy L. (1988) *Assistant Professor* BS 1981 State University of New York, Bingham; MS 1984 and PhD 1987 Virginia Commonwealth University
 Vanner-Nicely, Lauren (1991) *Instructor* BS 1982 James Madison University; MS 1984 University of Pittsburgh
 Wolf, Barry (1978) *Professor* BS 1969, MD 1974 and PhD 1974 University of Illinois
 Woodard, Charlene E. (1992) *Assistant Professor* BA 1986 Howard University; MS 1990 and PhD 1992 University of Georgia

Emeriti Faculty

Townsend, J. Ives *Professor Emeritus* BS 1941 University of South Carolina; PhD 1952 Columbia University

Affiliate Faculty

David P. Bick	Susan H. Black
Anthony D. Carter	Patricia Howard-Peebles
Gene Levinson	Anne Maddalena
Daniel J. Schulman	Emily A. Simonoff
Florence Smith-Neal	Penny L. Sprecher
Harvey J. Stern	

* Joint or secondary appointment

Department of Internal Medicine**Richard P. Wenzel**

Professor and Chair (1995) BS 1961 Haverford College; MD 1965 Jefferson Medical School; MS 1986 University of London

Allen, Chequeta D. (1991) *Assistant Professor* BS 1985 Carnegie-Mellon University; MBA 1994 College of William & Mary
 Barker, Sandra B.* (1990) *Associate Professor of Internal Medicine and Psychiatry* BA 1972 University of Florida; MS 1976 and PhD 1978 Florida State University
 Brink, Douglas D.*
 Carr, Marcus E. (1996) *Associate Professor* BS 1971 Davidson College; PhD 1975 University of North Carolina; MD 1979 University of North Carolina, Chapel Hill
 Carter, Walter H.*
 Comstock, Thomas J.*
 Conners, Wayne* *Instructor*
 Eissenberg, Thomas* *Assistant Professor*
 Fratkin, Melvin J.* *Professor*
 Gewirtz, David A.* (1981) *Associate Professor of Internal Medicine and Pharmacology and Toxicology* BS 1970 Brooklyn College; PhD 1978 City University of New York
 Gonzalez, Edgar*
 Grider, John R.* (1981) *Associate Professor of Internal Medicine and Physiology* BA 1973 University of Pennsylvania; PhD 1981 Hahnemann University
 Haller, Deborah L.* (1987) *Associate Professor of Internal Medicine and Psychiatry* BA 1972 Ohio State University; MA 1975 and PhD 1980 University of Alabama
 Hylemon, Phillip B.* (1972) *Professor of Internal Medicine and Microbiology and Immunology* BS 1967 Atlantic Christian College; PhD 1971 Virginia Polytechnic Institute and State University
 Ingersoll, Karen* *Assistant Professor*
 Irani, Anne-Marie* (1985) *Associate Professor of Internal Medicine and Pediatrics* BS 1974 American University of Beirut, Lebanon; MD 1978 A U of Beirut
 Knisely, Janet S.* *Associate Professor*

Kunos, George* (1992) *Professor of Internal Medicine and Pharmacology and Toxicology and Chair, Department of Pharmacology and Toxicology* MD 1966 Budapest Medical University; PhD 1973 McGill University
 Kurgans, Martha* *Assistant Professor*
 Lamb, Robert G.* (1974) *Professor of Internal Medicine and Pharmacology and Toxicology* AB 1967 and PhD 1970 University of North Carolina, Chapel Hill
 Mest, Simon J.* *Assistant Professor*
 Miller, Gerald*
 Mills, A. Scott* (1981) *Associate Professor of Internal Medicine and Pathology* BS 1973 University of Georgia; MD 1977 Medical College of Virginia of Virginia Commonwealth University
 Ornato, Joseph P.* *Professor and Department Head*
 Polk, Ronald E.* *Professor*
 Regelson, William (1967) *Professor of Internal Medicine and Microbiology and Immunology* AB 1948 University of North Carolina; MD 1952 State University of New York, Downstate
 Schneider, Robert K.* *Assistant Professor*
 Sirica, Alphonse E.* (1984) *Professor of Internal Medicine and Pathology* BS 1965 St. Michael's College; MS 1968 Fordham University; PhD 1977 University of Connecticut
 Small, Ralph E.*
 Tatum, James Luther* (1978) *Professor of Internal Medicine, Radiology and Radiation Sciences and Chair, Division of Nuclear Medicine* BS 1969 College of William & Mary; MD 1973 Medical College of Virginia of Virginia Commonwealth University
 Vieweg, Victor R.* (1991) *Professor of Internal Medicine and Psychiatry* BS 1957 United States Naval Academy; MD 1965 George Washington University

Emeriti Faculty

Ayres, Stephen M. *Professor Emeritus*
 Blanton, Wyndham B., Jr. *Clinical Professor Emeritus* BA 1943 University of Richmond; MD 1950 and MS 1959 Medical College of Virginia
 Farrar, John T. *Professor Emeritus* AB 1942 Princeton University; MD 1945 Washington University
 Goldman, I. David *Professor Emeritus* BA 1958 New York University; MD 1962 University of Chicago
 Irby, W. Robert *Professor Emeritus* AB 1943 Hampden-Sydney College; MD 1948 Medical College of Virginia
 James, G. Watson *Professor Emeritus*
 Mellette, Susan J. *Professor Emerita* AB 1942 Meredith College; MD 1947 University of Cincinnati
 Muren, Orhan *Professor Emeritus*
 Oken, Don *Professor Emeritus*
 Patterson, John L., Jr. *Professor Emeritus* AB 1935 Princeton University; MD 1939 Medical College of Virginia; MS 1943 University of Virginia
 Richardson, David W. *Professor Emeritus* BS 1947 Davidson College; MD 1951 Harvard University
 Schatzki, Peter F. *Professor Emeritus*
 Scott, Robert B. *Professor Emeritus* BS 1954 University of Richmond; MD 1958 Medical College of Virginia
 Thompson, W. Taliaferro, Jr. *Professor Emeritus* AB 1934 Davidson College; MD 1938 Medical College of Virginia
 Wasserman, Albert J. *Professor Emeritus* BA 1947 University of Virginia; MD 1951 Medical College of Virginia
 Watlington, Charles O. *Professor Emeritus* BS 1954 Virginia Polytechnic Institute and State University; MD 1958 and PhD 1968 Medical College of Virginia of Virginia Commonwealth University

Clinical Faculty

Mobashar Ahmad	Uduak Akan-Etuk
Milton J. Allen	Burness F. Ansell
Niti Armistead	Robert Bailey
Archer Baskerville	Richard N. Baylor
Robert W. Bedinger	Robert W. Bedinger
Alston Blount	Karen L. Blunk
Lloyd Bonner	G. Scott Borrelli
Brian T. Bradshaw	George Brengel
James P. Brodeur	David G. Buchsbaum
Patrick K. Burke	Allen S. Burris
William S. Burton	Vivian Bruzzese
Ernest P. Buxton	Josephine B. Cader

Maria Camacho
 Mary E. Clarke
 Roger Clevinger
 Peter Coutlakis
 Thomas D. Davis
 Bethany Denlinger
 Germano Disciascio
 Richard J. Duma
 George Eapen
 Michael T. Farrell
 John Fitzgerald
 Steven David Freer
 Stanley Furman
 Yogesh Gandhi
 C. Delp Givens
 Stanley A. Goldman
 Andrew Gorchs
 Richardson Grinnan
 Roderick Haithcock
 Richard M. Hamrick, III
 Elizabeth Harden
 Timothy Hartwig
 Walter Hendrix
 Angela Hogan
 Craig Howe
 E. Claiborne Irby
 Joseph A. James
 Robert R. Johnson
 Mathew K. Joseph
 Douglas W. Kane
 Karen Kirby
 Warren Koontz
 Mario Kuperminc
 Virginia A. Lamb-Redmond
 Hsing-Wu Lin
 Joseph Longacher
 Steven Maestrello
 Jeffrey A. Margolis
 Thomas Martyak
 H. Page Mauck
 James L. McDaniel
 Susan D. McHenry
 Charles E. McKeown
 David A. McLeod
 Grayson B. Miller
 John C. Mincks
 Robert Edgar Mitchell
 Richard L. Nemeck
 Joseph C. Nuara
 Clifton Parker
 Ronald E. Perry
 Gregory Pleasants
 Charles Pollock
 George Pritchard
 Brenda Ray
 Scott M. Reiner
 Randall Robinson
 Irvin J. Seeman
 Farrukh Sheikh
 Bruce A. Silverman
 Katherine Smallwood
 Vincent Speckhart
 Holly L. Stanley
 Peter Stefanik
 Charmaine Stewart
 James Sutherland
 Leslie Teets
 Marie T. Tiedemann
 Lorraine Trow
 Elaine S. Turner
 Geoffrey W. Viol
 Brian Wasserman
 Thomas E. Wheeler
 James R. Wickham
 Percy Wootton

Yi-Nan Chou
 Marypat Clements
 Charles L. Cooke
 Dan Dan
 William D. Deep
 William Dingleline
 John E. Drake
 Gansevoort Dunnington
 Billie Elliott
 William Ferrar
 Diane Franchi
 Eugene Fu
 Joseph Galeski
 Shelia Garris-Wallace
 Richard Glazier
 Robert P. Goodman
 David J. Greenberg
 Rodney D. Hagley
 Randolph Halloran
 Jiho J. Han
 Arthur Harrow
 Alan Hecht
 Michael Hirsch
 William E. Holland
 David G. Hughes
 Sanjeev Jairath
 Yves Janin
 Lerla Joseph
 Howard D. Kahn
 Jeffrey Kauffman
 Ravinder Kohli
 Ronald N. Kroll
 Katherine La Van
 St. George T. Lee
 Kathryn E. Loesser-Casey
 James M. MacMillan
 H. Thompson Mann
 William Martin
 Emmett C. Mathews
 Howard McCue
 Read McGehee
 Lee McHenry, Jr.
 Colleen McLaughlin
 George J. Mehfood
 Michael J. Miller
 Robert E. Mitchell
 Martin F. Monahan
 Eugene M. Newman
 Jerry Overton
 Antonio Pedro
 Charles W. Phillips
 John S. Poindexter
 Charles D. Price
 Nancy L. Radtke
 Sashi Reddy
 Phillip Rizk
 Leslie W. Rose
 Ellen Shapiro
 Richard Shepard
 Anna Sismanis
 William K. Smith
 I. Norman Sporn
 Martin Starkman
 Adam N. Steinberg
 Drury M. Stith
 Richard Tate
 William Thornton
 C. Kent Titus
 Nicolas Tulou
 Robert T. Turner
 Neshan M. Vranian
 Michael Weaver
 William A. Whitfield
 Scott D. Woogen
 Stephen C. Young

Brian E. Zable
 Lawrence Zacharias

Charles Zacharias

Division of Cardiology

George W. Vetovec

Professor of Internal Medicine and Chair, Division of Cardiology
 (1976) BA 1966 and MD 1970 University of Virginia

Akkuratova, Alexandra (1996) *Research Associate of Cardiology and Physiology*
 Akosah, Kwame *Assistant Professor*
 Arrowood, James A. (1987) *Associate Professor* BS 1970 University of Rhode Island; MS 1976 Pennsylvania State University; MD 1980 Pennsylvania State University
 Cannan, Charles R. *Assistant Professor*
 Clemo, Simon Henry (1992) *Assistant Professor* BA 1981 University of Virginia; PhD 1986 University of Virginia; MD 1987 University of Virginia
 Cooke, William H. (1995) *Research Associate of Cardiology and Physiology* BS 1990 University of Houston; MA 1991 University of Houston; PhD 1995 Texas A & M University
 Cowley, Michael J. (1977) *Professor* MD 1977 University of Alabama
 Cox, James F. (1996) *Research Associate of Cardiology and Physiology* BS 1983 Ft. Hays State University; MA 1986 Bowling Green State University; PhD 1994 Ohio University
 Eckberg, Dwain L. (1977) *Professor of Cardiology and Physiology* BA 1958 Wheaton College; MD 1963 Northwestern University
 Edwards, Virginia L. (1977) *Assistant Professor* BS 1972 Virginia Commonwealth University; MS 1977 Medical College of Virginia of Virginia Commonwealth University
 Ellenbogen, Kenneth A. (1989) *Professor* BA 1976 Princeton University; MD 1980 Johns Hopkins University
 Goudreau, Evelyn (1988) *Associate Professor* BS 1977 University of Montreal; MD 1981 University of Montreal
 Hanna, Diane L. (1978) *Research Assistant* BS 1978 University of Delaware; MS 1982 Medical College of Virginia of Virginia Commonwealth University
 Hastillo, Andrea (1974) *Associate Professor* BS 1965 University of Pittsburgh; MD 1969 University of Pittsburgh
 Hess, Michael L. (1971) *Professor of Internal Medicine and Chair, Division of Cardiology Laboratories and Research* BS 1964 St. Francis College; MD 1968 University of Pittsburgh
 Jesse, Robert L. *Assistant Professor*
 Kontos, Michael C.* (1991) *Assistant Professor of Emergency Medicine, Internal Medicine and Cardiology* MD 1983 Medical College of Virginia of Virginia Commonwealth University
 Kukreja, Rakesh C. (1984) *Associate Professor* ES BS 1974 Punjab University; MS 1977 Allahabad University; PhD 1982 Kurukshetra University
 Levasseur, Joseph E. (1970) *Research Assistant* MS 1967 Medical College of Virginia
 Malloy, Walter N. (1992) *Assistant Professor* BS 1967 Morgan State University; MD 1971 Meharry Medical College
 Minisi, Anthony J. (1990) *Associate Professor* BA 1976 and MD 1980 University of Pennsylvania
 Mohanty, Pramod K. (1989) *Professor* ISC 1958 Ravenshaw College; MD 1962 University of Utkal, India; MD 1965 SCB Medical College
 Nixon, John V. (1986) *Professor* MB ChB 1965 and MD 1982 Victoria University, United Kingdom
 Paulsen, Walter H. J. (1980) *Associate Professor* MB ChB 1969 University of East Africa
 Peberdy, Mary Ann (1993) *Assistant Professor* BA 1980 La Salle University; MD 1984 Temple University
 Prinz, Andreas *Assistant Professor*
 Romhilt, Donald W. (1977) *Professor* AB 1958 and MD 1962 Duke University
 Shepard, Richard K. *Assistant Professor*
 Tolman, David E. (1994) *Assistant Professor* MD 1987 Medical College of Virginia of Virginia Commonwealth University
 Topaz, On *Associate Professor*
 Wei, Enoch P. (1973) *Associate Professor* BA 1967 and PhD 1972 University of North Carolina
 Wood, Mark Allen (1991) *Assistant Professor* BA 1979 and MD 1983 University of Tennessee

Division of Clinical Pharmacology

Domenic A. Sica

Professor of Internal Medicine and Head, Division of Clinical Pharmacology (1981) BS 1971 Fordham University; MD 1975 Medical College of Virginia of Virginia Commonwealth University

Cole, Sabra O. (1995) *Instructor* BS 1987 Virginia Commonwealth University

Wilson-King, Dawn (1993) *Assistant Professor* BA 1982 San Diego State University; MA 1984 San Diego State University; PhD 1988 Vanderbilt University

Clinical Research Center

Harris, Paul A. *Assistant Professor*

Newman, Karen J. (1985) *Assistant Professor* BS 1967 S/CT State University; MS 1973 University of Bridgeport

Division of Endocrinology

John E. Nestler

Professor of Internal Medicine and Division Head, Division of Endocrinology (1985) BA 1975 Haverford College; MD 1979 University of Pennsylvania

Adler, Robert A.

Clare, John N. (1988) *Associate Professor* BS 1976 and MS 1977 Virginia Commonwealth University; MD 1982 Medical College of Virginia of Virginia Commonwealth University

Downs, Robert W. (1983) *Professor* BS 1970 and MD 1974 Duke University

Levy, James R.

Li, Jing (1990) *Research Associate* BS 1978 and MD 1981 West China Zieve, Franklin J.

Division of Gastroenterology

Zdravko Reno Vlahcevic

Professor and Eminent Scholar of Internal Medicine and Chair, Division of Gastroenterology (1979) MD 1956 University of Yugoslavia

Cooper, Patricia S. (1981) *Research Assistant* BS 1977 College of William & Mary; MS 1981 Louisiana State University

Foxx-Orenstein, Amy (1992) *Assistant Professor* BS 1981 University of Arizona; MD 1987 University of Osteopathic Medicine and Health Sciences

Heuman, Douglas M. (1983) *Professor* BA 1973 Yale University; MD 1977 University of Massachusetts

Kirby, Donald F. (1985) *Professor* BS 1975 and MD 1979 George Washington University

Kuemmerle, John F. (1990) *Assistant Professor* BS 1980 College of William & Mary; MD 1984 Eastern Virginia Medical School

Luketic, Velimir A. C. (1991) *Associate Professor* BA 1969 Haverford College; MA 1974 University of California, Berkeley; MD 1985 University of Alabama, Birmingham

Makhlouf, Gabriel M. (1970) *Professor* MD 1953 University of Liverpool; PhD 1965 University of Edinburgh

Moore, Edward W. (1970) *Professor of Internal Medicine and Pathology* BA 1952 and MD 1955 Vanderbilt University

Pandak, William Michael (1989) *Associate Professor* BS 1978 Randolph-Macon College; MD 1983 Medical College of Virginia of Virginia Commonwealth University

Sanyal, Arun J. (1989) *Associate Professor* ISC 1974 Patna University; MBBS 1981 Delhi University, India

Schubert, Mitchell L. (1982) *Professor* BA 1973 New York University; MD 1977 Baylor College of Medicine

Schwartz, Charles C. (1980) *Professor* BA 1965 University of Michigan; MD 1969 Wayne State University

Shiffman, Mitchell L. (1989) *Associate Professor* BA 1977 State University of New York; MS 1979 New Mexico University; MD 1983 State University of New York

Switz, Donald M. (1970) *Professor and Associate Dean for Ambulatory Care/External Services, School of Medicine* BA 1958 Carleton College; MD 1962 University of Chicago

Wassef, Wahid Y. (1993) *Assistant Professor* BA 1980 and MD 1984 Boston University

Zfass, Alvin M. (1963) *Professor* BA 1953 University of Virginia; MD 1957 Medical College of Virginia

Division of General Medicine and Primary Care

Mary D. Nettleman

Associate Professor of Internal Medicine and Head, Division of General Medicine and Primary Care (1996) BS 1977 Ohio University; MD 1981 Vanderbilt University; MS 1993 University of Iowa

Abbey, Linda J. (1989) *Associate Professor* BS 1976 Muhlenberg College; MD 1979 Duke University

Adams, Ruma G. (1993) *Instructor* MB ChB 1986 University of Glasgow

Aldhizer, Theodore G. (1996) *Assistant Professor* BS 1963 University of Richmond; MD 1968 Medical College of Virginia of Virginia Commonwealth University

Ayele, Hanna *Assistant Professor*

Becker, Elmore *Assistant Professor*

Bell, Patricia E. *Assistant Professor*

Boling, Peter A. (1984) *Associate Professor* BA 1976 Amherst College; MD 1981 University of Rochester

Brannen, Judy Lynn

Bruzzese, Joseph D. *Assistant Professor*

Clark, Ralph R., III (1990) *Assistant Professor* BS 1983 College of William & Mary; MD 1987 Medical College of Virginia of Virginia Commonwealth University

Clemo, Frances L. W.

Foster, Harriet H.

Freer, Steven D. (1994) *Assistant Professor* BA 1983 University of California, Santa Cruz; MD 1988 University of Rochester

Gardner, David F. (1978) *Professor* BA 1967 Brown University; MD 1971 New York University

Gianola, Katherine *Assistant Professor*

Gill, Ranjodh Singh *Assistant Professor*

Goldschalk, Michael F.

Gutterman-Cornell, Valerie E. (1996) *Assistant Professor* BS 1984 Union College; MD 1958 Sackler School of Medicine

Hillner, Bruce E. (1984) *Associate Professor* BA 1975 Cornell University; MA 1984 Harvard University; MD 1979 University of Chicago

Huber, Elizabeth C. (1989) *Assistant Professor* BS 1982 and MD 1986 University of North Carolina

Johnson, Betty Anne

Kanamori, Cesar I. *Instructor*

Kavanagh, Julia C. (1996) *Assistant Professor*

King, Katina (1997) *Assistant Professor* MD 1988 Medical College of Virginia of Virginia Commonwealth University

Link, Kurt *Assistant Professor*

McCardell, Kathleen A. *Assistant Professor*

McMurtry, Cynthia

Menajovsky, Leon B. (1996) *Assistant Professor* MS 1995 Iowa University; MD 1984 San Marcos National University, Peru

Meyers, Margaret Elizabeth (1991) *Assistant Professor* BS 1982 University of North Carolina, Greensboro; MS 1987 Virginia Commonwealth University

Moore, Shelly S. (1995) *Assistant Professor* MS 1994 Virginia Polytechnic Institute and State University

Mulligan, Thomas

Panebianco, Deborah I.

Perry, Robert P. (1979) *Associate Professor and Associate Dean for Graduate Medical Education, School of Medicine* AB 1972 Harvard University; MD 1976 University of Rochester

Pinson, Andy G. (1992) *Assistant Professor* BS 1983 Furman University; MD 1987 Medical University of South Carolina

Rao, T. Premasudha *Assistant Professor*

Retchin, Sheldon M.

Roberson, Margaret

Rogers, Alfred H. (1992) *Assistant Professor* BS 1985 Emory University; MD 1989 University of Tennessee

Rosenthal, Amy J.
 Rowe, Joy P. (1994) *Assistant Professor* MD 1987 Medical College of Virginia of Virginia Commonwealth University
 Schmitt, James *Associate Professor*
 Schroeder, Diane L. *Assistant Professor*
 Stuckey, Charles P.
 Vannier, Theresa A. (1994) *Instructor* MD 1991 State University of New York
 Vuyyuru, Sujatha (1995) *Instructor*
 Witherspoon, John M. (1977) *Professor of Internal Medicine and Health Administration* AB 1962 and MD 1967 Duke University; MPH 1977 Harvard University
 Yusi-Lenn, Almira Udarbe

Division of Hematology/Oncology

Carr, Marcus, Jr. *Associate Professor*
 Desch, Christopher E. (1988) *Associate Professor* BS 1977 and MD 1981 Ohio State University
 Edwards, Richard W. (1987) *Research Assistant* BS 1982 University of Iowa; BS 1975 Western Illinois University
 Ginder, Gordon Dean *Professor and Director, Massey Cancer Center*
 Grant, Steven (1987) *Professor* BS 1969 City College of New York; MD 1973 Mount Sinai School of Medicine
 Hackney, Mary Helen (1992) *Assistant Professor* BS 1979 University of North Carolina, Chapel Hill; MS 1982 University of North Carolina, Charlotte; MD 1988 East Carolina University
 Hines, Susan (1996) *Assistant Professor* BA 1982 Depauw University; MD 1987 University of Cincinnati
 Krystal, Geoffrey W. *Associate Professor*
 Lyckholm, Laurel J. (1995) *Assistant Professor*
 McCarty, John
 Mitchell, R. Brian (1992) *Assistant Professor* AB 1981 and MD 1985 Duke University
 Roberts, John D. (1993) *Associate Professor* AB 1972 Harvard University; MD 1976 University of Pennsylvania
 Seither, Richard L. (1984) *Associate Professor* BS 1975 Florida Institute of Technology; MS 1979 and PhD 1983 University of Missouri
 Shaw, James E. (1994) *Assistant Professor* MD 1985 University of California, Los Angeles; MPH 1994 University of North Carolina, Chapel Hill
 Smith, Wade K. (1975) *Associate Professor* AB 1959 Oberlin College; MD 1963 Johns Hopkins University
 Smith, Thomas J. (1985) *Associate Professor* BS 1974 University of Akron; MD 1979 Yale University
 Snyder, Steven R. *Assistant Professor*
 Yanovich, Saul (1978) *Professor* MD 1970 Javeriana University, Columbia

Division of Infectious Diseases

Gordon L. Archer

Professor and Head, Division of Infectious Diseases (1975) BA 1965 Washington and Lee University; MD 1969 University of Virginia

Climo, Michael W. *Assistant Professor*
 Fisher, Evelyn J. (1992) *Associate Professor* MD 1966 Wayne State University
 Ingroff, Victoria E.
 Kaplowitz, Lisa G.
 Kerkering, Thomas M.
 Lavoie, Suzanne R. (1992) *Assistant Professor* BS 1982, BS 1982 and MD 1986 University of Massachusetts
 Markowitz, Sheldon M. (1975) *Professor* BS 1964 University of Richmond; MD 1968 and MS 1978 Medical College of Virginia of Virginia Commonwealth University
 Monroe, Sara G. (1986) *Associate Professor of Internal Medicine and Infectious Diseases* BA 1971 New York University; MD 1980 Rush Medical College
 Nixon, Daniel E. *Assistant Professor*
 Wong, Edward S. *Associate Professor*

Division of Nephrology

Anton C. Schoolwerth

Professor and Head, Division of Nephrology (1985) AB 1963 Princeton University; MD 1967 Harvard Medical School

Digiovanni, Susan R. (1995) *Assistant Professor* MD 1984 Medical College of Virginia of Virginia Commonwealth University
 Drewnowska, Krystyna (1981) *Assistant Professor* BS 1976, MS 1976 and PhD 1981 Medical Academy
 Duran-Guerraty, Maria A. (1990) *Assistant Professor* MD 1972 University of Chile; CSPQ 1978 and MS 1978 University of Montreal
 Gehr, Todd W. B. (1987) *Associate Professor* BS 1977 and MS 1978 Purdue University; MD 1981 West Virginia University
 King, Anne L. (1985) *Assistant Professor* AB 1973 Bryn Mawr College; MD 1980 University of Pennsylvania
 Kirschbaum, Barry B. (1977) *Associate Professor* BA 1961 Columbia College; MD 1965 Washington University
 Ripley, Elizabeth B. D. (1991) *Assistant Professor* BS 1982 Meredith College; MD 1986 Medical College of Virginia of Virginia Commonwealth University

Division of Pulmonary

Kevin R. Cooper

Professor and Interim Head, Division of Pulmonary (1979) BS 1969 Boston College; MD 1973 State University of New York

Bechard, D. E. (1983) *Associate Professor*
 Brath, Lisa K. (1993) *Assistant Professor* BS 1984 Texas A & M University; MD 1988 University of Texas, Dallas
 Fairman, R. Paul (1977) *Professor* BS 1968 Johns Hopkins University; MD 1972 University of Missouri
 Fisher, Bernard J. (1982) *Research Assistant* BS 1981 Virginia Polytechnic Institute and State University; BS 1987 Virginia Commonwealth University
 Fowler, Alpha A. (1982) *Professor and Eminent Scholar* MD 1975 Medical College of Georgia
 Glauser, Frederick *Professor*
 Polatty, Rose Crystal (1983) *Associate Professor* BS 1973 Emory University; MD 1977 Medical College of Georgia
 Sessler, Curtis N. (1985) *Associate Professor* BA 1975 Miami University; MD 1979 University of Cincinnati

Division of Quality Health Care

Wally R. Smith

Associate Professor and Division Head (1991) BA 1977 Harvard University; MD 1981 University of Alabama

Bovbjerg, Victor E. (1995) *Assistant Professor* BS 1985 Iowa State University; PhD 1991 University of Washington
 Cotter, John J. (1994) *Instructor* BA 1971 Canisius College; MA 1975 State University of New York, Buffalo
 Edmond, Michael B. (1995) *Assistant Professor* BS 1982 Fairmont State College; MD 1986 West Virginia University; MPH 1991 University of Pittsburgh
 Penberthy, Lynne T. *Assistant Professor*
 Perlin, Jonathan B.
 Wong, Michael T. (1996) *Assistant Professor* BS 1983 University of California, Irvine; MD 1987 University of Vermont

Division of Rheumatology, Allergy and Immunology

Shaun J. Ruddy

Professor and Eminent Scholar of Internal Medicine and Head (1974) BA 1956 Yale University; MD 1961 Yale University

Buckley, Lenore M. (1993) *Associate Professor* AB 1973 Cornell University; MD 1977 University of Rochester
 Evans, Toni I. *Assistant Professor*

Moxley, George F. (1979) *Associate Professor* BA 1972 Kansas State University; MD 1976 Washington University
 Mullinax, Perry Franklin (1963) *Professor* BA 1951 Duke University; MD 1955 Medical College of Virginia
 Owen, Duncan S., Jr. (1966) *Professor and Eminent Scholar* BS 1957 and MD 1960 University of North Carolina, Chapel Hill
 Ren, Shunlin (1988) *Assistant Professor* MD 1979 and MS 1986 Shanghai University; PhD 1992 Medical College of Virginia of Virginia Commonwealth University
 Roberts, William N., Jr. (1986) *Associate Professor* BS 1973 Duke University; MD 1977 University of Virginia
 Sanders, Karen M.
 Schwartz, Lawrence B. (1983) *Professor and Eminent Scholar* BS 1970 University of Illinois; MD 1976 and PhD 1976 Washington University
 Wise, Christopher M. (1992) *Associate Professor* BS 1973 and MD 1977 University of North Carolina, Chapel Hill
 Wong, Dennis A. (1995) *Assistant Professor* BSC 1984 and MD 1984 University of Manitoba

Division of Substance Abuse Medicine

Sidney H. Schnoll

Professor of Internal Medicine and Psychiatry and Head (1987) BS 1964 Union College; MD 1967 New Jersey College of Medicine; PhD 1976 Thomas Jefferson University

Britt, Gena Covell (1993) *Assistant Professor* BA 1989 Randolph-Macon College; MS 1992 and PhD 1993 Virginia Commonwealth University
 Horvathich, Paula K. (1982) *Associate Professor* BS 1972, MS 1974 and PhD 1977 Purdue University
 Weaver, Michael F. *Assistant Professor*

Department of Legal Medicine

Marcella F. Fierro

Professor; Department Head and Chair

Ross, David L. *Assistant Professor*
 Swisher, Karen N. *Associate Professor*

Clinical Faculty

Beyer, James C. *Lecturer*
 Brewbaker, Robert S. *Lecturer*
 Bush, Leah L.E. *Assistant Clinical Professor*
 Crews, John W. *Lecturer*
 Dunn, Stuart H. *Lecturer*
 Field, Frances P. *Assistant Clinical Professor*
 Hancock, Thomas F. *Lecturer*
 Kay, Deborah *Assistant Clinical Professor*
 Kinnison, Elizabeth *Assistant Clinical Professor*
 Majette, R. Shawn *Lecturer*
 Massello, William *Lecturer*
 Oxley, David W. *Lecturer*
 Page, Rosewell *Lecturer*
 Rozovsky, Fay A. *Associate Clinical Professor*
 Russell, Jack B. *Lecturer*
 Sartoris, Laurens *Lecturer*
 Swisher, Karen N. *Associate Clinical Professor*
 Valentour, James *Associate Clinical Professor*

Massey Cancer Center

Gordon Dean Ginder*

Professor of Internal Medicine and Director

Buzzard, I. Marilyn* *Associate Professor*
 Desch, Christopher E.* *Associate Professor*
 Neier, Heather *Assistant Professor*
 Seither, Richard* *Assistant Professor*
 Smith, Thomas J.* *Associate Professor*
 Tombes, Robert M.* *Assistant Professor*

* Joint or secondary appointment

Department of Microbiology and Immunology

John G. Tew

Professor and Interim Chair (1972) BS 1966, MS 1967 and PhD 1970 Brigham Young University

Adler, Stuart P.* *Professor and Division Head*
 Barbour, Suzanne E. (1993) *Assistant Professor* BS 1983 Cook College; PhD 1990 Johns Hopkins University
 Buck, Gregory A. (1984) *Professor* BS 1975 University of Wisconsin; PhD 1980 University of Washington
 Cabral, Francine M. (1979) *Professor* BS 1966 College of White Plains; MS 1968 Villanova University; PhD 1974 University of Connecticut
 Cabral, Guy Anthony (1978) *Professor* BS 1967 University of Massachusetts; MS 1971 and PhD 1974 University of Connecticut
 Christie, Gail Ellen (1984) *Associate Professor* AB 1973 University of Chicago; PhD 1978 Yale University
 Conrad, Daniel H. (1989) *Professor* BS 1970 and PhD 1973 West Virginia University
 Formica, Joseph V. (1969) *Associate Professor* BS 1953 and MS 1954 Syracuse University; PhD 1967 Georgetown University
 Grant, Steven*
 Holmes, Walter M. (1977) *Professor* BS 1967 Memphis State University; PhD 1974 University of Tennessee
 Hsu, Hsiu-Sheng (1964) *Professor* BS 1955 McGill University; MS 1956 and PhD 1959 University of Pennsylvania
 Huff, Thomas F. (1985) *Professor* BS 1974 Clemson University; PhD 1980 University of Louisville
 Hylemon, Phillip B. (1972) *Professor* BS 1967 Atlantic Christian College; PhD 1971 Virginia Polytechnic Institute and State University
 Kauma, Scott W.*
 Kos, Ferdynand (1996) *Assistant Professor* MSC 1981 Jagiellonian University; PhD 1992 Australian National
 Lebman, Deborah A. (1989) *Assistant Professor* BA 1974 Dickinson College; MS 1979 Thomas Jefferson University; PhD 1987 University of Pennsylvania
 Loria, Roger M. (1973) *Professor* BS 1964 Bar-Ilan University, Israel; MS 1968 State University of New York; PhD 1972 Boston University
 Macrina, Francis Louis (1974) *Professor* BS 1968 Cornell University; PhD 1972 Syracuse University
 Marconi, Richard T. (1994) *Assistant Professor* BS 1983 William Paterson College; PhD 1988 University of Montana
 McCoy, Kathleen L. (1988) *Associate Professor* BS 1976 St. John Fisher College; MS 1979 and PhD 1983 University of Washington
 McVoy, Michael*
 Mikkelsen, Ross*
 O'Neal, Charles H. (1968) *Associate Professor* BS 1957 Georgia Institute of Technology; PhD 1963 Emory University
 Pettit, Denise A.* *Assistant Professor*
 Poklis, Alphonse*
 Povirk, Lawrence F.*
 Taylor, Shirley M. (1993) *Assistant Professor* BS 1974 University of Capetown, South Africa; BS 1976 and MS 1977 University of Stellenbosch, South Africa; PhD 1981 University of Southern California
 Tyler-Cross, Ruth E. (1984) *Research Associate* BS 1981 University of Washington; PhD 1991 Virginia Commonwealth University
 Valerie, C. Kistoffer*
 Weymouth, Lisa A.*
 Wu, Jiuhua

Emeriti Faculty

Bradley, S. Gaylen *Professor Emeritus* BA 1950 and BS 1950 State University of Southwest Missouri; MS 1952 and PhD 1954 Northwestern University
 Coleman, Phillip H. *Professor Emeritus* DVM 1956 University of Georgia; MS 1959 and PhD 1959 University of Wisconsin
 Shadomy, H. Jean *Professor Emerita* BA 1956, MA 1958 and PhD 1963 University of California, Los Angeles
 Welshimer, Herbert J. *Professor Emeritus* BS 1943 and PhD 1947 Ohio State University

Affiliate Faculty

Patricia L. Carlson
 Irving Roberts

Krista Fischer-Stenger
 Wayne H. Tinnell

Denise M. Toney
Leslie Whiteman

Eric Westin
Tadeusz A.Zwierzynski

* Joint or secondary appointment

Department of Neurology

Robert J. DeLorenzo

Professor and Chair (1985) BS 1969, MD 1973, MPH 1973 and PhD 1972 Yale University

Astruc, Juan*

Calabrese, Vincent P. (1972) *Associate Professor* BS 1961 Columbia University; MD 1965 State University of New York

Campbell, William W., Jr. (1981) *Professor* BA 1966 Emory University; MD 1970 Medical College of Georgia

Churn, Severn B. (1994) *Assistant Professor* BS 1984 College of William & Mary; MS 1986 University of Richmond; PhD 1991 Virginia Commonwealth University

Costanzo, Richard M.*

Corrie, W. Stephen (1987) *Associate Professor* BA 1962 Reed College; MD 1966 Washington University

Coulter, Douglas A. (1990) *Associate Professor* BS 1980 Trinity College; MS 1983 University of Rhode Island; PhD 1987 Boston University

Garnett, William R*

Henry, Charles E. (1980) *Professor* BA 1937 Fresno State College; MA 1938 and PhD 1940 University of Iowa

Leshner, Robert T. (1980) *Professor* AB 1965 and MD 1969 Cornell University

MacLaughlin, Susan B. (1986) *Assistant Professor* BS 1966 Mary Washington College; MEd 1970 College of William & Mary; MHA 1983 Medical College of Virginia of Virginia Commonwealth University

Morton, Lawrence (1994) *Assistant Professor* MD 1988 State University of New York, Downstate

Myer, Edwin C. (1973) *Professor* MB ChB 1956 University of Witwatersrand, Union of South Africa

Shapiro, Steven M. (1988) *Associate Professor* BS 1971 Syracuse University; MD 1975 University of Pittsburgh

Sombati, Sompong (1987) *Assistant Professor* BA 1973 University of Kansas; MS 1977 Mahidol University, Thailand; PhD 1983 University of Oregon

Suter, Cary G. (1959) *Professor* AB 1943 and BS 1943 Hampden-Sydney College; MD 1947 University of Virginia

Towne, Alan R. (1986) *Associate Professor* BA 1970 Hobart College; MD 1981 University of Aix-Marseille, France

Waterhouse, Elizabeth J. (1994) *Assistant Professor* MD 1988 Harvard University

Williams, Carlos *Assistant Professor*

Yu, Robert K.*

Emeriti Faculty

Harbison, John William *Professor Emeritus* BA 1959 and MD 1962 University of Iowa

Clinical Faculty

David M. Biondi
John J. Brush
Philip A. Davenport
Robert B. Hansen
J. Kim Harris
John J. Hennessey
Michael E. Keister
Francis McGee
Robert M. Paschall
Nelson G. Richards
Arthur R. Sonberg

Winifred D. Bragg
Robert J. Cohen
William L. Doss
Austin B. Harrelson
William O. Harris
Edward R. Isaacs
Vernon H. Kirk
John O'Bannon
Laurie E. Rennie
Michael R. Slattery
Bruce I. Tetelman

Division of Child Neurology

John M. Pellock

Professor and Head (1965) BA Johns Hopkins University; MS Fairleigh Dickinson University; MD St. Louis University

Myer, Edwin C. (1973) *Professor* MB ChB 1956 University of Witwatersrand, Union of South Africa

Shapiro, Steven M. (1988) *Associate Professor* BS 1971 Syracuse University; MD 1975 University of Pittsburgh

Division of Neuro-ophthalmology

Warren L. Felton, III*

Associate Professor and Head (1985) BA 1973 and MD 1980 University of Oklahoma

Division of Neuro-physiology

Bell, Zakia D. *Assistant Professor*

Corrie, W. Stephen (1987) *Associate Professor* BA 1962 Reed College; MD 1966 Washington University

Henry, Charles E. (1980) *Professor* BA 1937 Fresno State College; MA 1938 and PhD 1940 University of Iowa

Leshner, Robert T. (1980) *Professor* AB 1965 and MD 1969 Cornell University

Department of Obstetrics and Gynecology

John W. Seeds

Professor and Chair (1994) BS 1968 University of Washington; MD 1972 University of Virginia

Al-Mateen, Kevin Baker*

Bodurtha, Joann N.*

Borzelleca, Joseph F., Jr. (1991) *Assistant Professor* BA 1977 University of Virginia; MD 1981 Medical College of Virginia of Virginia Commonwealth University

Brock, Ellen L. (1992) *Associate Professor* BS 1977 University of South Carolina; MD 1981 Medical University of South Carolina

Cohen, Stephen A. (1994) *Associate Professor* BS 1971 Old Dominion University; MD 1975 Medical College of Virginia of Virginia Commonwealth University

Dinsmoor, Mara J. (1989) *Associate Professor* AB 1978 Dartmouth College; MD 1982 Indiana University

Edelson, Mary Bernardi*

Gill, Edward J. (1995) *Assistant Professor* BA 1982 College of Holy Christ; MD 1986 Tufts University

Girerd, Philippe H. (1992) *Assistant Professor* BA 1979 Rutgers University; MD 1983 University of Medicine and Dentistry of New Jersey

Gutcher, Gary R.*

Hardigan, Eileen O. (1995) *Assistant Professor* BS 1968 Trinity College
Hurt, Waverly Glenn (1968) *Professor* BS 1960 Hampden-Sydney College; MD 1964 Medical College of Virginia

Hutcheson, Douglas P. (1990) *Assistant Professor* BS 1980 College of William & Mary; MS 1983 Medical University of Alabama; MD 1989 Medical College of Virginia of Virginia Commonwealth University

Jackson-Cook, Colleen K.*

Kauma, Scott W. (1988) *Associate Professor* BA 1978 Lawrence University; MD 1982 University of Wisconsin

Kerkering, Kathryn W.*

Kornstein, Susan G.*

Matt, Dennis W. (1986) *Associate Professor* AB 1975, MS 1979 and PhD 1983 Rutgers University

Mueller, Dawn G.*

Nestler, John*

Peng, Thomas C. (1989) *Associate Professor* BA 1976 Johns Hopkins University; MD 1980 University of Connecticut

Richards-Bullock, Amanda (1992) *Associate Professor* MB ChB 1976 Captown University; MRCO 1982 Royal College of Surgeons of Edinburgh

Rozycki, Henry J.*

Segreti, Eileen M. (1994) *Assistant Professor* MD 1988 Duke University
Toppi, Karen Ann (1996) *Instructor* BS 1983 Indiana State University; MA 1985 University of Hartford; MD 1992 University of Chicago

Vandermolen, David T. (1993) *Assistant Professor* BS 1986 Oregon State University; MD 1986 University of Texas

Walsh, Scott W. (1990) *Professor* BS 1970, MS 1972 and PhD 1975
University of Wisconsin
West, Randal J. (1992) *Associate Professor* BS 1976 and MD 1980
University of Oklahoma
Wyman, Jean, F.*

Emeriti Faculty

Board, John A. *Professor Emeritus* BS 1953 Randolph-Macon College;
MD 1955 Medical College of Virginia
Collins, Judith B. *Associate Professor Emerita*
Dunn, Leo J. *Professor Emeritus* BA 1952 Hofstra University; MD 1956
Columbia University
Goplerud, Dean R. *Professor Emeritus* BA 1951 St. Olaf College; MD
1955 State University of Iowa
Hoge, Randolph H. *Professor Emeritus* BS 1924 University of Virginia;
MD 1928 Harvard University

Clinical Faculty

William E. Adkins
Erika H. Blanton
James T. Christmas
A. Stephen Eads
J. Coleman Feore
Edward F. Fugger
Joseph G. Gianfortoni
Jo Anne Gutliph
Marcus C. Hermansen
Minoos Hosseinzadeh
Bruce E. Johnson
Duncan C. MacIvor
William Joseph Mann
Pamela Hall McGhee
David L. Montague
Robert N. Mucciola
Lisa Olenik
Nathan H. Rabhan
Sanford Rosenberg
Harry W. Royal
Edmund Schoeffler
Kenneth Steingold
Alexandra Tate
George F. Tidey
Jean Wisgirda
Stephen E. Zimberg

Joseph V. Battista
Karin L. Buettner
George W. Cornell
Michael C. Edelstein
David Forrest
Norma Geddes
Floyd Keith Goodman
Stuart H. Hamilton
Alice J. Hirata
Shelby E. Jarrell
Karen Knapp
Max Sam Maizels
Adrienne L. Maraist
Philip L. Minor
Gregory P. Moore
Nan G. O'Connell
Robert E. Petres
Richard Rinehardt
Bruce C. Rowe
Sue Kelly Sayegh
Katherine Shaughnessy
Kathryn E. Stout
Charles Thedieck
Peter Wilbanks
Peter A. Zedler

* Joint or secondary appointment

Department of Ophthalmology**Robert C. Allen**

Professor and Chair (1994) MD 1975 University of Virginia

Benson, William H. (1992) *Assistant Professor* BA 1982 Northwestern
University; MD 1986 West Virginia University
Carney, Marcia D. (1987) *Associate Professor* BA 1973 Wellesley College;
MD 1977 Cornell University
Felton, Warren L.*
Hoyle, Laura Sharon (1994) *Instructor* BS 1990 University of Alabama;
MS 1981 University of Florida
Miller, Amy (1996) *Instructor* BS 1987 and OD 1989 Indiana University
Tabassian, Ali R. (1996) *Assistant Professor* BS 1981 and PhD 1987
George Washington University; MD 1990 Medical College of Virginia
of Virginia Commonwealth University
Wright, John D. (1996) *Associate Professor* BA 1968 and MD 1972 Yale
University

Emeriti Faculty

Guerry, DuPont, III *Professor Emeritus* BS 1934 Furman University;
MD 1938 University of Virginia; DMedSc 1944 Columbia University
Nooney, Thomas W., Jr. *Professor Emeritus* BA 1942 Trinity College; BS
1948 and OD 1949 Los Angeles College of Ophthalmology; MS 1961
University of Rochester; PhD 1970 Medical College of Virginia of
Virginia Commonwealth University

Clinical Faculty

Charles J. Blair
J. Paul Bullock
John B. H. Caldwell
Geoffrey G. Cooper
Eleanore M. Ebert
Kennon R. Guerry
Robert W. Jacey
Kenneth Lipstock
Keith W. McNeer
W. E. Morgan
Clifton Peay
George E. Sanborn
Thomas P. Stratford
Edwin Wortham, V
Jeffrey John Zuravleff

James L. Brown
Walter E. Bundy
James L. Combs
Frank Cotter
James G. Ferguson
Gregory J. Heyner
Robert King
David MacMillan
Paul R. McNeer
Perry Wesley Mullen
Anthony D. Sakowski
Lindley T. Smith
Stephan Volk
Davis B. Wyatt

* Joint or secondary appointment

Department of Orthopaedic Surgery**John A. Cardea**

Professor and Chair (1973) MD 1966 West Virginia University

Adelaar, Robert S. (1976) *Professor* BS 1966 and BA 1967 Lehigh
University; MD 1970 University of Pennsylvania
Anderson, Thomas F. (1994) *Assistant Professor* MHA 1969 Medical
College of Virginia of Virginia Commonwealth University; MT 1979
Virginia Commonwealth University
Carr, James B. (1989) *Associate Professor* BS 1976 Colorado State
University; MD 1980 Northwestern University
Hayes, Curtis W.*
Loughran, Thomas P. (1983) *Associate Professor* BS 1973 College of
William & Mary; MD 1977 Medical College of Virginia of Virginia
Commonwealth University
Nogi, Jay (1979) *Associate Professor* AB 1968 University of Rochester;
MD 1971 Jefferson Medical College
Patterson, Ronald H. (1990) *Assistant Professor* BS 1965 Wake Forest
University; BS 1966 North Carolina State University; MD 1971
Medical College of Virginia of Virginia Commonwealth University
Yin, Chang (1995) *Assistant Professor* MD 1982 Chengdu Institute; PhD
1990 University of London
Zuelzer, Wilhelm A. (1990) *Associate Professor* MD 1971 and MS 1988
University of Texas

Clinical Faculty

Susan Atkins
John D. Bowman
E. L. Clements
Kennedy Daniels
W. Minor Deyerle
William K. Fleming
Keith Glowacki
William Henceroth
E. Clairborne Irby
William A. Jiranek
Steven H. Jones
Stephen Leibovic
William R. Mauck
Charles McDowell
David John Muron
William E. Nordt
Donald G. Seitz
J. Michael Simpson
David Craig Urquia
Jeffrey K. Wilson
Dale C. Young
David S. Zelouf

William H. Bowers
Richard B. Caspari
James B. Dalton
Sanjay J. Desai
Steven Mark Fiore
William C. Foster
David Haines
M. J. Hoover
Charles M. James
William Johnstone
Michael K. Kyles
Hallett H. Mathews
Virgil R. May
John F. Meyers
Herman Nachman
Walter N. Rabhan
Chester Sharps
Howard G. Stern
Terry Whipple
Chang Yin
Kenneth Robert Zaslav

* Joint Appointment

Department of Otolaryngology

Aristides Sismanis

Professor and Chair (1980) MD 1973 University of Athens, Greece

Ali, M. Karim *Associate Clinical Professor*
 Costanzo, Richard M.*
 Dinardo, Laurence J. (1991) *Assistant Professor* BA 1982 Middlebury College; MA 1986 Stanford University
 Frible, Mary A. (1967) *Professor* BA 1955 Oberlin College; MD 1959 Northwestern University
 Godin, Michael S. (1993) *Assistant Professor* BA 1982 Rice University; MD 1986 Tulane University
 Hasenstab, Mary S.* (1986) *Professor* BS 1963, MEd 1968 and PhD 1975 Kent State University
 Kastetter, Sean K.*
 Kazanoglu, Altug*
 King, Michael D. (1979) *Associate Professor* BS 1966 Central State University; MS 1969 Phillips University; PhD 1976 University of Oklahoma
 Laine, Fred J.* *Associate Professor*
 Smoker, Wendy R.K.* *Professor*
 Spencer, Robert F.*
 Stevens, Ann G.*
 Wohl, Daniel L. (1991) *Assistant Professor* BS 1978 Muhlenberg College; MD 1985 Medical College of Pennsylvania
 Yu, Robert K.*

Emeriti Faculty

Cutler, S. James *Professor Emeritus* BS 1941 Temple University; MS 1958 College of William & Mary
 Flowers, Ann N. *Associate Professor Emerita* BS 1943 Minnesota State College, Bemidjia; MS 1949 University of Wisconsin; EdD 1965 University of Virginia
 Smith, Maynard P. *Clinical Professor Emeritus* BS 1934 Randolph-Macon College; MD 1938 University of Virginia
 Williams, George H. *Professor Emeritus* BS 1952 and MD 1956 Tulane University

Clinical Faculty

Woodford Beach	Douglas F. Bryant
Henry B. Creech	David Cross
Anthony Giordano	G. Douglas Hayden
Clifton C. Hickman	Jeffery Powell
Fred T. Shaia	Jaimoon M. Shim
Michael A. Stamm	Tucker Ann Stevens

* Joint or secondary appointment

Department of Pathology

David S. Wilkinson

Professor and Chair (1993) BS 1967 Virginia Military Institute; PhD 1971 University of Wisconsin, Madison; MD 1978 University of Miami

Abbey, Louis M.* *Associate Professor*
 Braudrick, Larry W. (1969) *Assistant Professor* BS 1967 Richmond Professional Institute
 Burns, James C.* *Associate Professor*
 Carr, Marcus* *Associate Professor*
 Coudron, Philip E. *Assistant Professor*
 Freude, Kenneth A. *Assistant Professor*
 Jackson-Cook, Colleen* *Assistant Professor*
 Kaugars, George E.* *Professor*
 Lippman, H. Robert *Associate Professor*
 Mohanty, Laxmi B. *Associate Professor*
 Page, Dennis G.* *Associate Professor*
 Pandya, Arti* *Assistant Professor*
 Robinson, Susan E.* *Professor*
 Schwartz, Lawrence B.* *Professor*
 Svirsky, John A.* *Associate Professor*
 Todd, William *Associate Professor*

Emeriti Faculty

Allison, Marvin J. *Professor Emeritus* BA 1942 College of William & Mary; MA 1947 and PhD 1960 University of Pennsylvania
 Gander, G. William *Professor Emeritus* BS 1953 Montana State College; MS 1955 and PhD 1959 Cornell University
 Hench, Miles E. *Professor Emeritus* BS 1941 Lawrence University; MS 1949 and PhD 1952 University of Michigan
 Kay, Saul *Professor Emeritus* BA 1936 New York University; MD 1939 New York Medical College
 Lurie, Harry I. *Professor Emeritus* BS 1932 and MB ChB 1936 University of the Witwatersrand, South Africa
 Nakoneczna, Irene *Associate Professor Emerita* MD 1949 Albert-Ludwigs University, Germany
 Rosenblum, William I. *Professor Emeritus* BA 1957 Swarthmore College; MD 1961 New York University
 Vennart, George P. *Professor Emeritus* AB 1948 Wesleyan University; MD 1953 University of Rochester
 Young, Nelson F. *Professor Emeritus* BS 1935 University of Washington; PhD 1945 New York University

Clinical Faculty

Carl W. Armstrong	Ralph E. Beck
James W. Blaine	Russell O. Briere
Richard S. Buddington	Richard H. Carpenter
George J. Carroll	Sallie Cook
Georgean G. Deblois	Harold P. Dunn
Fabio E. Gutierrez	Robert A. Hershberg
Harry F. Hoke	Ali A. Hossaini
Janice K. Jesse	Gregory Klimock
James W. Patterson	Catherine Pierce
Carlos Pinto	Joseph Saady
Carolyn E. Thomas	George W. Thomas
John L. Thornton	

* Joint or secondary appointment

Division of Anatomical Pathology

Charles W. Moncure

Associate Professor and Head (1967) BA 1956 University of Virginia; MD 1963 Medical College of Virginia

Gerszten, Enrique (1962) *Professor* CPA 1951 and MD 1958 University of Buenos Aires, Argentina
 Hard, Richard C., Jr. (1966) *Associate Professor* BS 1954 Northwestern University; MD 1958 St. Louis University

Division of Clinical Pathology

Richard A. McPherson

Professor and Head (1994) BS 1969 Massachusetts Institute of Technology; BS 1969 Massachusetts Institute of Technology; MD 1973 University of California

Anderson, Frank P. (1993) *Assistant Professor* BA 1977 University of Tennessee; BS 1980 University of Tennessee; MS 1982 Louisiana Tech University; PhD 1988 Medical College of Virginia of Virginia Commonwealth University
 Becker, Joanne L. (1995) *Assistant Professor* MD 1989 Northeastern Ohio University
 Ben-Ezra, Jonathan (1991) *Associate Professor* BA 1979 and MD 1979 Boston University
 Fisher, Lyman M. (1960) *Professor* BA 1951 University of Western Ontario; MS 1954, MD 1957 and PhD 1960 University of Saskatchewan
 Miller, Greg (1977) *Professor* PhD 1973 University of Arizona
 Poklis, Alphonse (1987) *Professor* BS 1969 and PhD 1974 University of Maryland
 Riley, Roger S. *Associate Professor*
 Weymouth, Lisa A. (1993) *Assistant Professor* BA 1967 Swarthmore College; PhD 1977 University of Pennsylvania

Division of Graduate Research and Education**Alphonse E. Sirica**

Professor and Head (1984) BS 1965 St. Michael's College; MS 1968 Fordham University; PhD 1977 University of Connecticut

Ware, Joy Laurin (1987) *Associate Professor* BA 1975 and PhD 1979 University of North Carolina

Division of Molecular Diagnostics**Carleton T. Garrett**

Professor and Head (1993) AB 1962 Lehigh University; MD 1966 Johns Hopkins University; PhD 1977 University of Wisconsin

Ferreira-Gonzalez, Andrea (1994) *Assistant Professor* MS 1985 National University of Cordob; PhD 1994 George Washington University

Division of Neuropathology**Nitya R. Ghatak**

Professor and Head (1976) MBBS 1957 University of Calcutta, India

Hadfield, M. Gary (1970) *Professor* BA 1960 Brigham Young University; MD 1964 University of Utah

Division of Surgical Pathology**William J. Frable**

Professor and Head (1966) BS 1956 and MD 1959 Northwestern University

Burks, Robert Tucker (1994) *Assistant Professor* MD 1987 University of South Carolina

Contos, Melissa J. (1988) *Assistant Professor* MD 1988 Medical College of Virginia of Virginia Commonwealth University

Grimes, Margaret M. (1990) *Associate Professor* BA 1971 Rosemont College; MD 1975 New York Medical College

Kornstein, Michael J. (1986) *Associate Professor* BA 1977 Cornell University; MD 1980 State University of New York

Mills, A. Scott (1981) *Associate Professor* BS 1973 University of Georgia; MD 1977 Medical College of Virginia of Virginia Commonwealth University

Remmers, Rebecca E.

Stastny, Janet F. (1992) *Assistant Professor* BSN 1975 University of Illinois; DO 1986 Chicago College of Osteopathic Medicine

Wallace, Michael L. *Assistant Professor*

Department of Pediatrics**Jay A. Perman**

Professor and Chair (1996) BA 1968 Northwestern University; MD 1972 Northwestern University

Al-Mateen, Cheryl S.* *Associate Professor*

Bagwell, Charles E.* *Professor and Division Head*

Bodurtha, Joann N.* *Associate Professor*

Buckley, Lenore M.* *Associate Professor*

Dittrich, Melissa S. *Instructor*

Dudley, Barbara (1996) *Instructor* BSN 1982 University of South Alabama; MSN 1990 University of Alabama

Ellison, Jay W. *Assistant Professor*

Embrey, Richard P.* *Assistant Professor*

Everette, Lucinda L.* *Associate Professor*

Fisher, Robert A.* *Associate Professor*

Haynes, Jeffrey H.* *Assistant Professor*

Hingsbergen, Elizabeth A.* *Assistant Professor*

Krieg, Richard J.* *Professor*

Kuemmerle, Nancy *Instructor*

Lavoie, Suzanne* *Assistant Professor*

Morton, Lawrence* *Assistant Professor*

Muniz, Antonio E.* *Assistant Professor*

Nance, Walter E.* *Professor and Department Head*

Norris, Wilma D. (1969) *Assistant Professor* AA 1960 Lees-McRae Juni

Pandya, Arti* *Assistant Professor*

Parmelee, Dean X.* *Associate Professor and Division Head*

Seaman, David S.* *Assistant Professor*

Shapiro, Jay H.* *Associate Professor*

Shapiro, Steven* *Associate Professor*

Singh, Nirbhay N.* *Professor*

Sonenklar, Neil* *Associate Professor*

Sonnino, Roberta E.* *Associate Professor*

Spottswood, Stephanie E.* *Assistant Professor*

Wohl, Daniel L.* *Assistant Professor*

Wolf, Barry* *Professor*

Wood, Isaac* *Associate Professor*

Wright, John D.* *Associate Professor*

Clinical Faculty

Katherine Abbott

Melody Ailsworth

Barbara Allison-Bryan

Jack P. Andrews

Gayle G. Arnold

Michael Z. Blumberg

Sandra Boisseau

James F. Brennan

C. D. Burch

William M. Carr

William L. Curry

Daniel N. Davidow

Gerald Dewitt

Robert Y. Fidler

Harry L. Gewanter

Judith Grossberg

Jeffrey S. Hanzel

James Heywood

Margie L. Jaworski

Barbara Kahler

Gordon N. Kellett

Stanley Kirchmier

J. Richard Klaas

Denise C. Kuperminc

Robbie Lewis-Blackwell

Robert D. Lovinger

Rhoda Leigh Mahoney

Mary H. N. Megson

Marilyn A. Meyer

Hassan A. Mohagheghi

Frederick Moore

Lawrence Morton

Timothy O'Neil

Dominick Pastore

Mark Polanshek

Paul E. Prince

Frederick H. Rahal

Jocelyn Realubit

Patrick Reardon

Gilberto E. Rodriguez

Martha K. Saunders

Robert S. Shayne

Gayle Smith

Whitney Sprinkle

Claudia E. Sussdorf

Deidre Leigh Tyson

James M. Wells

E. James Wiley, Jr.

Ted Williams

Kim Peeler Yucha

Ted R. Abernathy

G. Thomas Albrecht

John D. Andrako

Bob Archuleta

Sandra A. Bell

J. W. Boatwright

J. Thomas Bones

George M. Bright

Margaret R. Campbell

Amelia H. Colley

Ronald B. David

Philip A. J. Dawson

James H. Dwyer

Mark Flanzbaum

Elton Grant

Patricia L. Gurney

Bernard D. Herman

Michael Jaffe

Lindsey A. Johnson

Mickael M. Kannan

Ann T. Kessel

Barry V. Kirkpatrick

Colleen Kraft

Richard M. Lee

Russell C. Libby

Vicki Lovings

F. Stanford Massie

Bernard Member

William W. Miller

Edward L. Mollen

James J. Morris

Robert E. Noble

Thomas P. Overton

Frederic Phillips

Georgia Prescott

Jessica J. Radcliffe

Karen A. Ransone

Patricia Reams

Grover Robinson

Shirhari S. Sakhadeo

Joseph Schulman

Mark I. Shreve

Stuart Solomon

Elizabeth Stephens

Charles V. Terry

Julie Weaver

E. James Wiley, III

Vivian M. Wilkerson

Melville G. Wright, III

* Joint or secondary appointment

Division of Adolescent Medicine**Richard R. Brookman**

Professor and Head (1980) AB 1965 Franklin and Marshall College; MD 1969 Tufts University

Division of Allergy/Immunology

Anne-Marie Irani

Associate Professor and Head (1985) BS 1974 and MD 1978
American University of Beirut, Lebanon

Division of Critical Care Medicine

John Joseph Mickell

Professor and Head (1978) BS 1968 Manhattan College; MD 1972
Columbia University

Hill, Matthew (1996) *Assistant Professor* BS 1986 and MD 1990 East
Tennessee State University

Sreedhar, Sue S. (1993) *Assistant Professor* MBBS 1982 Madurai
University, India

White, Sara L. (1993) *Assistant Professor* MD 1977 Howard University

Division of Gastroenterology

Wallace F. Berman

Professor and Head (1977) BS 1967 and MD 1969 University of
Minnesota

Graham, Martin F. (1980) *Professor* MD 1973 and MB ChB 1973
University of Capetown, South Africa

Division of General Pediatrics and Emergency Care

Bar-on, Miriam E. (1991) *Associate Professor* BS 1977 University of
Michigan; MD 1982 Hahnemann University

Burns, Shelley Olds (1994) *Assistant Professor* MEd 1994 James
Madison University

Connelly, Kevin P. (1995) *Assistant Professor* DO 1989 University of
New England

Derco, Keith A. (1995) *Assistant Professor* BS 1973 and MD 1977
University of Pittsburgh

Dolan, Margaret A. (1993) *Associate Professor* BS 1970 College of Mount
St. Joseph-on-the-Ohio; MD 1981 Case Western Reserve University

Draper, David A. (1964) *Professor of Pediatrics and Pathology* MD 1958
Queens University

Ellis, Cynthia R. (1990) *Assistant Professor* BS 1981 and MD 1985
University of Nebraska

Foster, Robin L. (1996) *Assistant Professor* BS 1985 College of William
& Mary; MD 1989 Medical College of Virginia of Virginia
Commonwealth University

Liner, Steven R. (1993) *Associate Professor* BA 1967 and MS 1972
Rutgers University; MD 1977 College of Medicine and Dentistry of
New Jersey

Meloy, Linda D. (1990) *Assistant Professor* BA 1977 Drew University;
MD 1981 Rutgers University

Nash, Carolyn R. *Assistant Professor*

Silver, Dana Lise (1996) *Assistant Professor* BS 1987 Cornell
University; MD 1991 Maryland University

Tipton, Gary A. (1993) *Associate Professor* BS 1971 University of
Michigan; MD 1975 Wayne State University

Division of Genetics/Endocrinology/Metabolism

Karl S. Roth

Professor and Head (1981) AB 1963 University of Rochester; MA
1965 City University of New York; MD 1969 Wake Forest
University

Kaplowitz, Paul B. (1982) *Associate Professor* BS 1970 University of
Michigan; PhD 1975 and MD 1976 University of Chicago

Rizzo, William B. (1982) *Professor* BA 1972 Northwestern University;
MD 1977 University of Illinois

Willis, Dale M. (1992) *Assistant Professor* BA 1976 University of
Chicago; MD 1981, MS 1982 and PhD 1991 Oregon Health Sciences
University

Division of Hematology/Oncology

Edward C. Russell

Professor and Head (1978) BS 1966 Wake Forest University; MD
1970 Bowman Gray School of Medicine

Dunn, Nancy L. (1979) *Associate Professor* BA 1969 Western Reserve
University; MD 1973 State University of New York, Buffalo

Massey, Gita V. (1987) *Assistant Professor* BS 1977 College of William &
Mary; MD 1981 Medical College of Virginia of Virginia
Commonwealth University

Division of Infectious Diseases

Stuart P. Adler

Professor and Head (1979) BA 1968 and MD 1971 Johns Hopkins
University

Koch, William C. (1989) *Assistant Professor* BA 1977 and MD 1981
University of Virginia

Manganello, Anne-Marie A. (1987) *Research Assistant* BSN 1982
Medical College of Virginia of Virginia Commonwealth University

McVoy, Michael (1984) *Assistant Professor* BS 1983 College of William
& Mary; PhD 1993 Medical College of Virginia of Virginia
Commonwealth University

Division of Neonatal-Perinatal Medicine

Gary R. Gutcher

Professor of Pediatrics and Head (1987) BA 1966 Stanford
University; MD 1972 Johns Hopkins University

Al-Mateen, Kevin Bakeer (1992) *Assistant Professor* MD 1984 Howard
University

Edelson, Mary Bernardi (1995) *Assistant Professor* MD 1989 New York
Medical College

Kerkering, Kathryn W. (1979) *Associate Professor* BS 1970 Duke
University; MD 1974 Medical College of Virginia of Virginia
Commonwealth University

Mueller, Dawn G. (1977) *Associate Professor* BA 1968 Susquehanna
University; MD 1972 Medical College of Virginia of Virginia
Commonwealth University

Rozycki, Henry J. (1988) *Associate Professor* BS 1977 McGill University;
MD 1981 University of Medicine and Dentistry of New Jersey

Division of Nephrology

James C. Chan

Professor and Head (1977) CM 1964 and MD 1964 McGill University

Scheinman, Jon I. (1993) *Associate Professor* AB 1962 Wesleyan
University; MD 1966 University of Illinois

Division of Pediatric Cardiology

Richard M. Schieken

Professor, Eminent Scholar and Division Head (1982) BA 1961 La
Salle College; MD 1965 University of Pennsylvania

Donofrio, Mary T. (1995) *Assistant Professor*

Gullquist, Scott D. (1993) *Assistant Professor* BA 1982 Vanderbilt
University; MS 1983 and MD 1987 Georgetown University

Moskowitz, William B. (1984) *Associate Professor* BS 1975 Florida
Technological University; MD 1978 University of South Florida

Robertson, Louise W. (1965) *Associate Professor* BS 1956 Mary
Washington College; MD 1960 Medical College of Virginia

Division of Pediatric Pulmonology

Gregory R. Elliott

Associate Professor and Head (1990) BS 1973 Harding College;
MD 1977 University of Arkansas

Sharp, Jack K. (1996) *Assistant Professor* BS 1985 University of Maryland; MD 1989 McGill University

Department of Pharmacology and Toxicology

George Kunos

Professor and Chair (1992) MD 1966 Budapest Medical University; PhD 1973 McGill University

Abd-Elfattah, Anwar S.*

Abood, Mary E. (1990) *Associate Professor* BA 1979 Carleton College; PhD 1986 University of California, San Francisco

Aceto, Mario D. (1973) *Professor* BS 1953 Providence College; MS 1956 University of Maryland; PhD 1959 University of Connecticut

Allen, Robert C.*

Balster, Robert L. (1973) *Professor* BS 1966 University of Minnesota; PhD 1970 University of Houston

Beardsley, Patrick M. (1993) *Associate Professor* BA 1974 and PhD 1982 University of Minnesota

Bowman, Edward R. (1981) *Research Associate* PhD 1963 Medical College of Virginia

Coulter, Douglas A.*

Damaj, M. Imad (1991) *Assistant Professor* BS 1985 St. Joseph University; PhD 1991 University of Paris

Dance, Mario E. (1995) *Research Associate* BS 1986 Virginia Polytechnic Institute and State University; 1990 Virginia/Maryland Regional College of Veterinary Medicine

Dent, Paul*

Dewey, William L.

Ellis, Earl F., Jr. (1977) *Professor* BS 1968 Oklahoma State University; PhD 1974 Bowman Gray School of Medicine

Gao, Bin (1993) *Assistant Professor* MD 1986 Bethune University; PhD 1989 Medical College of China

Gewirtz, David A. (1981) *Associate Professor of Pharmacology and Toxicology and Internal Medicine* BS 1970 Brooklyn College; PhD 1978 City University of New York

Grant, Steven* *Professor*

Harris, Louis S. (1972) *Professor* BA 1954, MA 1956 and PhD 1958 Harvard University

Ishac, Edward J. N. (1993) *Assistant Professor* BS 1979 and PhD 1983 Monash University, Australia

Jakoi, Emma*

Kessler, Fay K. (1976) *Research Assistant* MS 1976 Medical College of Virginia of Virginia Commonwealth University

Knisely, Janet S.*

Lamb, Robert G.* (1974) *Professor of Pharmacology and Toxicology and Internal Medicine* AB 1967 and PhD 1970 University of North Carolina, Chapel Hill

Li, Si-Jia (1993) *Research Associate* MD 1975 Jilin Medical University; MS 1981 and PhD 1985 Beijing Medical University

Lichtman, Aron H. (1993) *Assistant Professor* BA 1984 Rutgers University; PhD 1989 Dartmouth College

Martin, Billy R. (1976) *Professor* AB 1965 and PhD 1974 University of North Carolina, Chapel Hill

May, Everette Lee (1977) *Professor* BA 1935 Bridgewater College; PhD 1939 University of Virginia

Moran, Richard G. (1993) *Professor* BS 1967 Boston College; PhD 1974 State University of New York, Buffalo

Munson, Judith A. (1967) *Research Assistant* BS 1965 Emory and Henry College

Nestler, John*

Patrick, Graham A. (1973) *Professor* BS 1969 University of North Carolina; PhD 1973 Tunghai University

Pettit, Denise A. (1996) *Assistant Professor* BS 1984 Virginia Commonwealth University; PhD 1994 Medical College of Virginia of Virginia Commonwealth University

Poklis, Alphonse* *Professor*

Povirk, Lawrence F. (1985) *Associate Professor* BS 1972 Carnegie-Mellon University; PhD 1977 University of California, Berkeley

Ritter, Joseph K. (1993) *Assistant Professor* BA 1982 St. Louis University; PhD 1987 University of Utah

Robinson, Susan E. (1981) *Professor* BA 1972 and PhD 1976 Vanderbilt University

Rosecrans, John A. (1967) *Professor* BS 1957 St. John's University; MS 1960 and PhD 1963 University of Rhode Island

Rzagalinski, Beverly A. (1994) *Research Associate* BS 1977 Rutgers University; MS 1980 New York University; PhD 1994 Old Dominion University

Satin, Leslie S. (1990) *Associate Professor* AB 1975 University of California, Santa Barbara; MS 1977 University of Southern California; PhD 1982 University of California, Los Angeles

Sawyer, Stephen T. (1995) *Associate Professor* BS 1974 and PhD 1980 University of Tennessee

Smith, Forrest L. (1993) *Assistant Professor* BS 1983 Abilene Christian University; PhD 1989 Texas Tech University

Tao, Qing (1993) *Research Associate* MD 1985 Beijing Medical University

Varga, Karoly (1992) *Assistant Professor* MD 1978 Semmelweis Medical; PhD 1989 Semmelweis University of Medicine

Welch, Sandra P. (1983) *Associate Professor* BS 1971 Dakota State College; MS 1973 University of North Dakota; PhD 1986 Medical College of Virginia of Virginia Commonwealth University

White, Kimber L., Jr. (1981) *Associate Professor* BS 1972 United States Naval Academy; PhD 1981 Medical College of Virginia of Virginia Commonwealth University

Wiley, Jenny Leigh (1994) *Assistant Professor* BS 1981 College of William & Mary; MS 1988 and PhD 1991 Virginia Commonwealth University

Woodward, John J. (1989) *Associate Professor* BS 1977 Texas A & M University; MS 1979 and PhD 1982 University of Washington

Emeriti Faculty

Borzelleca, Joseph F. *Professor Emeritus* BS 1952 St. Joseph's College; MS 1954 and PhD 1956 Thomas Jefferson University

Egle, John L., Jr. *Professor Emeritus* BS 1961 Shepherd College; MS 1963 and PhD 1964 West Virginia University

Woods, Lauren A. *Professor Emeritus* BS 1939 Dakota Wesleyan University; PhD 1943 Iowa State University; MD 1949 University of Michigan

Affiliate Faculty

David R. Compton

Arthur Jacobson

Paal C. Klykken

B. Jean Meade

Raj K. Razdan

Ronald P. Rubin

A. Wallace Hayes

Norbert E. Kaminiski

Donald McAfee

James Putney

Martin Rodbell

* Joint or secondary appointment

Department of Physical Medicine and Rehabilitation

Karen S. Rucker

Professor and Chair (1989) BA 1981 and MD 1985 University of Louisville

Burnette, Derek M. *Assistant Professor*

Cifu, David X. (1991) *Associate Professor* BA 1986 and MD 1986 Boston University

Clarke, Margaret P. (1997) *Instructor* BS 1970 S Advent University; MS 1978 Loma Linda University

Decker, Michael J. (1996) *Associate Professor* BA 1965 Miami University; MS 1969 Purdue University; MD 1971 Case Western Reserve University

Dery, Adrienne Roberta (1988) *Assistant Professor* BS 1974 Auburn University; MBA 1986 James Madison University

Green, James H.

Gudas, Stephen A. (1978) *Assistant Professor* BS 1971 University of Pennsylvania; MS 1976 and PhD 1988 Medical College of Virginia of Virginia Commonwealth University

Huang, Mark E. (1996) *Assistant Professor* BS 1990 Pennsylvania State University; MD 1992 Jefferson Medical College

Humphrey, Reed*

Jena, Tripti

Kreutzer, Jeffrey S. (1983) *Professor* BA 1975 State University of New York, Binghamton; MA 1978 Appalachian State University; PhD 1982 Bowling Green State University

Lamb, Charles
 Loughran, Thomas P.*
 Marwitz, Jennifer H. (1988) *Instructor* BS 1986 University of Wisconsin; MA 1989 University of Richmond
 McKinley, William O. (1989) *Assistant Professor* BS 1979 Davidson College; MD 1985 Albany Medical College
 Midha, Meena
 Naumann, Thomas J. (1991) *Instructor* BS 1985 and MS 1991 Virginia Commonwealth University
 Roche, Walter J. (1996) *Assistant Professor* BA 1988 University of Puerto Rico; MD 1992 Ponce Medical School
 Stewart, Deborah G. (1995) *Assistant Professor* MD 1985 West Virginia University
 Walker, William C. (1991) *Assistant Professor* BS 1983 University of Virginia; MD 1987 Medical College of Virginia of Virginia Commonwealth University
 Wilson, Kristi E. (1995) *Assistant Professor* BS 1986 Hampton University; PhD 1995 Medical College of Virginia of Virginia Commonwealth University
 Witol, Adrienne D. (1994) *Assistant Professor* PSD 1994 Florida Institute of Technology
 Zuelzer, Wilhelm A.*

Clinical Faculty

Charles H. Bonner	Hillary S. Hawkins
Richard P. Hermann	Albert M. Jones, Jr.
Gregory Leghart	Nancy N. Murphy
Herbert Park	Jane P. Wootton

* Joint or secondary appointment

Division of Rehabilitation Research**Paul H. Wehman**

Professor and Division Head (1976) BA 1970 Western Illinois University; MS 1972 Illinois State University; PhD 1976 University of Wisconsin, Madison

Department of Physiology**Margaret C. Biber**

Professor and Chair (1975) BS 1964 University of London; DPhil 1967 Oxford University

Baumgarten, Clive Marc (1979) *Professor* BA 1970 and PhD 1976 Northwestern University
 Biber, Thomas L. (1975) *Professor* MD 1954 University of Zurich; PhD 1956 University of Berne
 Cleary, Stephen F. (1964) *Professor* BS 1958 New York University; MS 1960 University of Rochester; PhD 1964 New York University
 Clemo, Simon Henry* *Assistant Professor*
 Costanzo, Linda S. (1981) *Professor* BA 1969 Duke University; PhD 1973 State University of New York, Upstate
 Costanzo, Richard M. (1979) *Professor* BS 1969 and PhD 1975 State University of New York
 Coulter, Douglas A.*
 DeSimone, John A. (1974) *Professor* BA 1964 State University of New York; PhD 1971 Harvard University
 Eckberg, Dwain L.* *Professor*
 Fabiato, Alexandre (1975) *Professor* MD 1969 and PhD 1970 University of Paris
 Feher, Joseph J. (1977) *Professor* BS 1971, MS 1973 and PhD 1978 Cornell University
 Ford, George D.
 Goldberg, Stephen J.*
 Grider, John R. (1981) *Associate Professor* BA 1973 University of Pennsylvania; PhD 1981 Hahnemann University
 Heck, Gerard L. (1980) *Assistant Professor* PhD 1974 Duke University
 Hess, Michael L.*
 Kalimi, Mohammed Y. (1979) *Professor* BS 1961, MS 1964 and PhD 1970 Bombay University
 Karnam, Srinivasa M. (1992) *Assistant Professor* BS 1977, MS 1979 and PhD 1983 SV University
 Kuemmerle, John F.* *Assistant Professor*

Lyall, Vijay (1994) *Assistant Professor* BS 1970 Punjab University, India; MS 1975 and PhD 1981 Postgraduate Institute of Medical Education Research, India
 Lyeth, Bruce G.* *Associate Professor*
 Mikulecky, Donald C. (1973) *Professor* BS 1971 Illinois Institute of Technology; PhD 1963 University of Chicago
 Miller, Gerald E.* *Professor*
 Pittman, Roland N. (1974) *Professor* BS 1966 and MA 1968 Massachusetts Institute of Technology; PhD 1971 State University of New York
 Poland, James L. (1967) *Associate Professor* BS 1962 Waynesburg College; MS 1964 and PhD 1967 West Virginia University
 Price, Steven (1966) *Professor* AB 1958 Adelphi University; MA 1960 and PhD 1961 Princeton University
 Ramoa, Ary S.* *Assistant Professor*
 Ridgway, Ellis B. (1972) *Professor* BS 1963 Massachusetts Institute of Technology; PhD 1968 University of Oregon
 Satin, Leslie S.* *Associate Professor*
 Schoolwerth, Anton C.* *Professor and Head, Division of Nephrology*
 Schubert, Mitchell L.* *Professor*
 Shapiro, Steven* *Associate Professor*
 Ware, Joy Laurin* *Professor*
 Wilson, John D.* *Associate Professor*
 Witorsch, Raphael J. (1970) *Professor* AB 1963 New York University; MA 1965 and PhD 1968 Yale University

Emeriti Faculty

Briggs, F. Norman *Professor Emeritus* AB 1947, MA 1948 and PhD 1953 University of California
 Corley, Karl C. *Associate Professor Emeritus* BS 1958 Trinity College; PhD 1964 University of Rochester
 Edwards, Leslie E. *Professor Emeritus* BS 1937 and MS 1939 Washington State University; PhD 1944 University of Rochester
 Ham, William T, Jr. *Professor Emeritus*
 Huf, Ernst G. *Professor Emeritus* PhD 1931 and MD 1937 University of Frankfurt, Germany

Affiliate Faculty

Phillip W. Archer	Ajay S. Bhatnagar
Gary L. Bowlin	Peter C. Brunjes
Helen Ruth Clemo	Daniel Ennis
David L. Hill	John G. Mchaffie
Ghulam D. Qureshi	Barry Stein
Mark T. Wallace	

* Joint or secondary appointment

Department of Preventive Medicine and Community Health**Jack O. Lanier**

Professor, Eminent Scholar and Chair, Department of Preventive Medicine and Community Health and Associate Vice President for Health Sciences (1992) BS 1955 North Carolina A & T State University; MHA 1970 Baylor University; DPH 1975 University of Texas

Adera, Tilahun (1994) *Assistant Professor* PhD 1987 Oregon State University
 Anderson, Lisa S. *Research Associate*
 Banks, William L.* *Professor*
 Barker, Thomas* *Professor*
 Brinson, Elizabeth* *Assistant Professor*
 Buzzard, I. Marilyn *Associate Professor*
 Cooper, Kevin R.* *Professor and Division Head*
 Danish, Steve* *Professor*
 Gurnick, Dolores A.* *Assistant Professor*
 Kaplowitz, Lisa G.* *Associate Professor*
 Kerkering, Thomas M.* *Professor*
 Kilpatrick, S. James* *Professor*
 Kreutzer, Kathleen O'Kane* *Instructor*
 Lasser, Andrew A.* *Assistant Professor*
 Luke, Roice D.* *Professor*
 Mazmanian, Paul E. (1978) *Professor* BS 1972 Wayne State University; MA 1975 Michigan State University; PhD 1979 University of Michigan

Rossiter, Louis F.* *Associate Professor*
 Sanders, Karen M.* *Associate Professor*
 Slater, William K. *Research Associate*
 Vance, R. Leonard (1986) *Associate Professor* BS 1962 Virginia Polytechnic Institute and State University; PhD 1969 University of Virginia; JD 1975 University of Richmond
 Wan, Thomas T. H.* *Professor*
 Wenzel, Richard P.* *Professor and Department Head*

Emeriti Faculty

Ayres, Stephen M.*
 Jesse, Robert W. *Professor Emeritus* MD 1946 University of Tennessee; MPH 1952 Johns Hopkins University
 Peebles, Edward H., Jr. *Associate Professor Emeritus* BS 1957 Richmond Professional Institute; MA 1963 University of Pennsylvania; PhD 1972 University of Kentucky
 Spencer, Frederick J. *Clinical Professor Emeritus* MB 1945 and BS 1945 University of Durham, United Kingdom; MPH 1958 Harvard University

Clinical Faculty

Carl Armstrong	Charles R. Baffi
Judith B. Bradford	Homer Cole
David A. Compton	Elizabeth Page Eustis-Turf
Randolph Gordon	Marybeth Hendricks-Mathews
Daniel M. Jannuzzi	Read F. McGehee
William R. Nelson	Kerry J. Redican
James W. Ross	Donald Stern
Robert B. Stroube	Peter Walker
James C. Wesdock	Phillip E. Winter
Lester N. Wright	

* Joint or secondary appointment

Department of Psychiatry**Joel J. Silverman**

Professor and Chair (1975) BA 1965 Washington University; MD 1969 University of Kansas

Adkins, Julian
 Aggen, Steven H. *Research Assistant*
 Atri, Padmini B.
 Baskett, Sarah
 Best, Al M., III (1981) *Associate Professor* BS 1973 University of Tennessee; MA 1978 University of North Carolina, Chapel Hill; PhD 1984 Medical College of Virginia of Virginia Commonwealth University
 Blatecky, John J. (1991) *Assistant Professor* BBA 1970 University of Wisconsin; MBA 1984 University of Richmond
 Blum, Joel A. *Associate Professor*
 Britt, Gena Covell* *Assistant Professor*
 Bulik, Cynthia M. (1996) *Associate Professor* BA 1982 University of Notre Dame; MA 1985 University of California, Berkeley; PhD 1988 University of California, Berkeley
 Compton, Amelia D. (1994) *Assistant Professor* BA 1989 Mary Baldwin College; MS 1991 Virginia Commonwealth University; PhD 1999 Virginia Commonwealth University
 Conners, Wayne* *Instructor*
 Corretier-Arzuaga, Gustavo *Assistant Professor*
 Eaves, Lindon J.* *Professor*
 Ellis, Cynthia R.* *Assistant Professor*
 Fernandez, Antony *Assistant Professor*
 Feuer, Stanley J. *Instructor*
 Frechen, Kathleen A. *Assistant Professor*
 Gardner, Charles (1995) *Research Associate* MS 1995 University of Nebraska; PhD 1976 University of Florida
 Gerber, Paul* *Professor*
 Harkins, Stephen* *Professor*
 Herrick, Stephen *Assistant Professor*
 Horvath, Paula K.* *Associate Professor*
 Joseph, Mary *Assistant Professor*
 Karkowski-Shuman, Laura (1995) *Research Associate* BS 1986 William Paterson College; MS 1989 and PhD 1992 Pennsylvania State University

Kirby, Donald F.* *Professor*
 Knisely, Janet S. (1984) *Assistant Professor* BS 1981, MS 1983 and PhD 1985 Virginia Commonwealth University
 Lewis, Robert E. (1990) *Associate Professor* BS 1969 St. Benedict's College; MA 1971 and EdD 1972 Appalachian State University; EdD 1975 Virginia Polytechnic Institute and State University
 Ma, Yunlong (1996) *Research Assistant* BS 1984 Northeast Fores; MS 1989 Dalian University of Technology
 MacLean, Charles J. (1989) *Professor* BS 1958 University of Wisconsin; MS 1964 New York University; PhD 1970 George Washington University
 May, Teresa M.* *Assistant Professor*
 McCullough, James* *Associate Professor*
 Neale, Michael C. (1986) *Associate Professor* BS 1980 University of London; PhD 1985 University of London
 Nelson, Kirk L. *Assistant Professor*
 Prescott, Carol A. (1991) *Assistant Professor* BA 1984 Johns Hopkins University; MA 1984 Johns Hopkins University; PhD 1991 University of Virginia
 Robbins, Steven* *Professor*
 Ross, David *Assistant Professor*
 Schnoll, Sidney H.* *Professor and Division Head*
 Silberg, Judy L.* *Assistant Professor*
 Straub, Richard E. (1993) *Assistant Professor* BA 1982 New College; PhD 1990 Cornell University
 Sullivan, Patrick (1996) *Associate Professor* BS 1981 Notre Dame; MD 1988 University of California, San Francisco
 Theogaraj, Janakiraj *Associate Professor*
 Vieweg, Victor R. (1991) *Professor* BS 1957 United States Naval Academy; MD 1965 George Washington University
 Voskanian, Pogos H. *Assistant Professor*
 Winfrey, C. Jack *Assistant Professor*
 Woodard, Charlene E.* *Assistant Professor*

Emeriti Faculty

Schumann, Morton D. *Associate Professor Emeritus* AB 1947 and MSW 1951 West Virginia University

Clinical Faculty

David Albright	Robert Alessi
Eden Alexander	Jonathon Anderson
Richard H. Armstrong	Padmini Atri
Phyllis A. Berg	Lisa Myra Berman
Michael S. Bick	Charles A. Binford
Dana Robert Blackmer	Douglass Bloomfield
Dina S. Boettcher	Henry A. Bowen
Eric Braen	Frederick Bram
Kenneth P. Brooks	D. Earl Brown
Molly Brunk	James Bumpass
William T. Burke	Martin N. Buxton
Harold Carmel	Wesley B. Carter
Lawrence Conell	Richard E. Curtis
Debbie Daniels-Mohring	Charles M. Davis
Ann V. Deaton	Walter Draper
John P. Dwyer	John E. Ehrmantraut
Alan D. Entin	Prakash G. Etti
Hugo Falcon	Carole Farnham
William T. Ferriss	Gwendoline Fisher
Sydney Fleischer	Ronald Forbes
Renate Forssmann-Falk	Helen Foster
Merritt W. Foster	Robert O. Friedel
Lawrence L. Gardner	Olivia J. Garland
Joseph A. Garten	Humberto Gomez
Joan Marie Goodship	Robert G. Green
Grace Hadeed	William L. Harp
Peggy Harrelson	Henry D. Holland
Kathleen Hopkins	Joyce A. Hudson
David S. Hulburt	Livia Jansen
W. Stanley Jennings	Sharlene P. Johnson
Cheryl Jones	J. Kipling Jones
Anthony Joseph	Daniel E. Kowler
Lois Kriegman	Anne D. Lagow
Sultan Lakhani	Larry Latham
Lillian Lindemann	Verda L. Little
Burt Lowe	Bradford Lyles
Cynthia Jayne Maghakian	David Markowitz

Michael Martelli
Theresa M. May
Julia G. McLaughlin
Charles Meyer, III
Norma Murdoch-Kitt
Evan Stewart Nelson
Robert Niccolini
Edward A. Peck
Robert Petry
Miriam Pizzani
Thomas F. Reif
John Russell
Philip G. Schlobohm
Amit Shah
Ramakrishnan Shenoy
Henry K. Silberman
Anne Sitarz
Elliott J. Spanier
Jacqueline S. Stone
Anthony Thornton
Amenra Tuason
William Walker
Robert K. Williams
Greg J. Wolber
Craig Yagel

Sherman Master
Dwight McCall
Philip B. McLean
Henry E. Morris
Bobby W. Nelson
Michele K. Nelson
Mary S. Olinger
Steven F. Peed
Willard Pierce
Joan Plotkin
Paul Reilly
Mary Jane Sale
James E. Sellman
Daniel P. Sheneman
William A. Shepard
Neena G. Singh
Angela Smith
Paul M. Spector
Dimitrios Theodoridis
Patricio Torres-Lisboa
Robin Clair Tucker
Yvonne Watkins
Joan E. Winter
L. Marianne Wouters
Penelope Ziegler

* Joint or secondary appointment

Division of Ambulatory Care

Susan G. Kornstein

Assistant Professor and Division Head (1988) BS ScB 1980 and MD 1983 Brown University

Camp, Norman M. (1988) *Professor* AA 1962 University of Florida; MD 1966 University of Tennessee
Christian, Frances M. (1976) *Associate Professor* BA 1972 Howard University; MSW 1974 University of Michigan; PhD 1994 Virginia Commonwealth University
Churchill, Frank E., Jr. (1993) *Assistant Professor* BA 1970 California State University; MSW 1972 University of California, San Francisco; MD 1976 University of California, San Francisco; MPH 1976 University of California, Berkeley
Jenkins, Christopher (1993) *Assistant Professor*
Kendler, Kenneth S. (1983) *Professor and Eminent Scholar* BA 1972 University of California; MD 1976 Stanford University
Kurgans, Martha (1989) *Instructor* BS 1971 Grinnell College; MA 1976 University of Chicago
McDaniel, Kent *Assistant Professor*
McKenzie, Norma D. (1987) *Assistant Professor* BA 1965 Stanford University; MS 1967 University of Oregon; MD 1971 University of California
Mishra, Asha S. (1985) *Associate Professor* BS 1976 Lady Hardinge Medical College, India; MD 1976 Lady Hardinge Medical College, India
Riley, William T. (1989) *Associate Professor* BS 1979 James Madison University; MS 1981 and PhD 1984 Florida State University
Sholar, Elbert F. (1991) *Assistant Professor* AB 1982 Washington University; MD 1987 St. Louis University
Sood, Aradhana A. (1988) *Associate Professor* MBBS 1979 ; MS 1980 Gajra Raja Medical College, India
Sriram, Thiruneermalai G. *Assistant Professor*
Thomas, J. Randall (1988) *Associate Professor* BS 1975 Bowling Green State University; MA 1977 and PhD 1982 University of Florida
Urbach, John R. (1984) *Associate Professor* AB 1973 Cornell University; MD 1977 University of Michigan
Weber, David J. (1976) *Associate Professor* MD 1971 Jefferson Medical

Division of Child and Adolescent Psychiatry

Dean X. Parmelee

Associate Professor and Division Head (1986) BA 1970 Antioch College; MD 1975 University of Rochester

Al-Mateen, Cheryl S. (1989) *Associate Professor* BS 1981 and MD 1983 Howard University

Boon, Franklin L. (1991) *Associate Professor* MD 1971 University of Singapore
Cohen, Robert (1984) *Professor* BA 1962 Drew University; MS 1966 and PhD 1967 Syracuse University
Cole, Debra E. (1991) *Assistant Professor* PhD 1987 Virginia Polytechnic Institute and State University
Doyle, Nancy L. (1991) *Assistant Professor* BS 1975 Medical College of Virginia of Virginia Commonwealth University; MS 1981 Chapman College
Fahey, William (1996) *Assistant Professor* PhD 1992 Indiana State
Frank, Tawni *Assistant Professor*
Jenson, Cary E. (1991) *Assistant Professor* BA 1969 Central Washington State; MSW 1983 and PhD 1996 Virginia Commonwealth University
Kilgore, Dennis K. (1996) *Assistant Professor*
Kruczek, Theresa A. (1992) *Assistant Professor* BA 1983 Purdue University; MA 1986 and PhD 1990 Ball State University
Moritz, Jennine (1994) *Assistant Professor* BS 1988 University of S. Sewanee; MA 1991 and PhD 1993 University of South Florida
Singh, Nirbhay N. (1989) *Professor* BA 1972, MA 1973 and PhD 1979 University of Auckland, New Zealand
Sonenklar, Neil A. (1991) *Assistant Professor* BA 1973 Cornell University; MD 1977 University of Michigan
Wiley, Shirley B. (1993) *Instructor* BS 1974 and MEd 1979 Virginia State University; PhD 1996 Virginia Commonwealth University
Wood, Isaac K. (1989) *Associate Professor* BS 1978 Lynchburg College; MD 1982 Medical College of Virginia of Virginia Commonwealth University

Division of Clinical Psychology

Robert P. Hart

Professor of Psychiatry and Surgery and Division Head (1981) BA 1975, MA 1977 and PhD 1980 North Illinois University

Culbert, James P. (1981) *Associate Professor* BA 1972 State University of New York, Buffalo; BS 1974 and PhD 1979 University of Florida
Haller, Deborah L. (1987) *Associate Professor* BA 1972 Ohio State University; MA 1975 and PhD 1980 University of Alabama
Ingersoll, Karen (1992) *Assistant Professor* PhD 1992 University of Virginia
Olbrisch, Mary Ellen (1985) *Associate Professor* BA 1973 DePaul University; MS 1975 and PhD 1978 Florida State University
Wade, James B. (1984) *Associate Professor* BA 1979 State University of New York; PhD 1984 University of Chicago
Wagner, Christopher C. (1994) *Assistant Professor* BA 1986 Purdue University; MS 1992 and PhD 1995 Virginia Commonwealth University

Division of Consultation/Liaison Psychiatry

James L. Levenson

Professor and Division Head (1982) BA 1973 University of Chicago; MD 1977 University of Michigan

Jesudian, Alice N. *Assistant Professor*
Oswald, Donald P. (1990) *Assistant Professor* BS 1975 Eastern Mennonite College; MEd 1981 James Madison University; PhD 1989 Virginia Polytechnic Institute and State University
Pelonero, Anthony L. (1987) *Associate Professor* BS 1979 Virginia Commonwealth University; MD 1983 University of Medicine and Dentistry of New Jersey
Schneider, Robert K. *Assistant Professor*

Division of Inpatient Psychiatry

Ananda K. Pandurangi

Professor and Division Head (1984) MBBS 1975 University of Madras; MD 1978 University of Bangalore; ABPN 1985 Evanston Ill

Barker, Sandra B. (1990) *Associate Professor* BA 1972 University of Florida; MS 1976 and PhD 1978 Florida State University
Klinger, Rochelle L. (1987) *Associate Professor* BA 1982 and MD 1982 Boston University

Rasmussen, Keith G., Jr. (1995) *Assistant Professor* BS 1981 Emory University; MA 1983 Radford University; MD 1987 Medical College of Virginia of Virginia Commonwealth University
 Sood, Rakesh K. (1988) *Associate Professor* MBBS 1977 Maulana Azad Medical College, India

Department of Radiation Oncology

Rupert Schmidt-Ullrich

Professor and Chair (1988) MD 1970 University of Heidelberg, Germany

Arnfield, Mark Robert (1993) *Assistant Professor* BS 1977 and MS 1980 University of Toronto; PhD 1989 University of Alberta
 Arthur, Douglas W. (1990) *Assistant Professor* MD 1989 Wake Forest University
 Benedict, Stanley H. (1993) *Assistant Professor* BA 1980 University of California, San Diego; MS 1984 San Diego State University; PhD 1992 University of California, Los Angeles
 Cardinale, Robert M. (1995) *Assistant Professor* MD 1991 University of Maryland
 Dent, Paul (1996) *Assistant Professor* BS 1988 University of New Castle; PhD 1991 University of Dundee
 Freeman, Howard K. *Research Associate*
 Garmon, Pamela W. (1992) *Assistant Professor* MS 1991 East Carolina University
 Huang, David T. (1992) *Assistant Professor* BS 1970 National Chiao-Tung University, Taiwan; MS 1975 University of Texas, Houston; PhD 1984 University of North Carolina, Chapel Hill; MD 1987 Bowman Gray School of Medicine
 Johnson, Christopher R. (1986) *Associate Professor* BA 1976 University of Virginia; MD 1981 Medical College of Virginia of Virginia Commonwealth University
 Kachnic, Lisa A. (1996) *Assistant Professor*
 Kavanagh, Brian D. (1993) *Assistant Professor* BS 1984, MPH 1988 and MD 1988 Tulane University
 Libby, Bruce (1996) *Research Associate* BS 1986 Rensselaer Polytechnic Institute; PhD 1992 University of Maryland
 Lin, Peck-Sun (1988) *Professor* BS 1960 and MS 1963 National Taiwan University; PhD 1966 South Dakota State University
 Mikkelsen, Ross B. (1988) *Professor* BA 1968 and PhD 1973 University of California, Santa Barbara
 Mohan, Radhe (1996) *Professor* BS 1962 and MS 1963 Punjab University; PhD 1969 Duke University
 Mustain, W. Anthony (1988) *Assistant Professor* BA 1976 College of William & Mary; MBA 1984 Virginia Commonwealth University
 Siebers, Jeffrey V. *Assistant Professor*
 Valerie, C. Kristoffer (1989) *Associate Professor* MS 1980 Royal Institute of Technology, Sweden; MS 1985 Temple University; PhD 1986 Royal Institute of Technology, Sweden
 Wu, Qiuwen (1996) *Assistant Professor* BS 1988 University of Science and Technology; MA 1990 and PhD 1994 Columbia University
 Zwicker, Robert D. (1988) *Associate Professor* BS 1962 Purdue University; MS 1969 and PhD 1972 University of Kentucky

Clinical Faculty

Robert Heath
 Kwei-Chi H. Lin
 Christopher C. Sinesi
 James Donald Kinard
 William Bruce Lundeen

Department of Radiology

B. J. Manaster

Professor and Chair (1998) BA 1970 Oberlin College; PhD 1975 University of Chicago; MD (1978) University of Florida

Broga, Dean W.* (1975) *Associate Professor and Director, Environmental Health and Safety* BS 1974 Lowell Technological Institute; MS 1976 University of Lowell; PhD 1983 University of Virginia
 Elliott, Sherry C. (1986) *Assistant Professor* BS 1982 and MBA 1985 Virginia Commonwealth University
 Marmarou, Anthony* (1982) *Professor of Radiology and Surgery* BS 1959 Drexel University; MS 1966 University of Pennsylvania; PhD 1973 Drexel University

Pandurangi, Ananda K.* *Professor*
 Spangler, Kevin M. *Instructor*

Emeritus Faculty

Neal, M. Pinson, Jr. *Professor Emeritus* MD 1953 University of Tennessee; BS 1949 University of Missouri

Clinical Faculty

Michael C. Beachley
 Charles H. Cockrell
 Jean Maurice Dufour
 Hebert H. Galston
 Robert A. Goldschmidt
 John D. Grizzard
 Mary E. Jensen
 A. John Kuta
 Major Frank Snyder
 Arina Van Breda
 John L. Wade
 Gerald W. Capps
 David M. Cohen
 Maurice Finnegan
 Alexander Girevendulis
 Curtis E. Green
 Talmadge R. Howell
 Karsten Konerding
 Scot A. Lebolt
 Cary Straton
 Melvin Vinik
 John A. Weaver

* Joint or secondary appointment

Division of Diagnostic Radiology

Daniel A. Henry

Associate Professor and Division Head (1977) BS 1966 and MD 1971 St. Louis University

Allison, Matthew C. *Instructor*
 Auletta, Ann G. *Assistant Professor*
 Austin, Raymond F., Jr. (1989) *Assistant Professor* AB 1956 Dartmouth College; MD 1959 Harvard University
 Balkissoon, Avinash R. A. (1994) *Assistant Professor* MBBS 1985 University of West Indies
 Bentley, Jack K. *Assistant Professor*
 Bosch, Herman A. (1973) *Assistant Professor* AB 1963 Drew University; MD 1967 Tufts University
 Brewer, William H. (1978) *Associate Professor* BA 1964 and MD 1968 Vanderbilt University
 Cole, Timothy J. (1992) *Assistant Professor* BS 1984 Dickinson College; MD 1988 Jefferson Medical College
 Damiano, Thomas R. *Assistant Professor*
 Demeo, Jonathan H. (1991) *Assistant Professor* BS 1982 Virginia Military Institute; MD 1986 Medical College of Virginia of Virginia Commonwealth University
 Dunn, Melinda M. (1995) *Assistant Professor* MD 1991 Medical College of Virginia of Virginia Commonwealth University
 Floyd, Harold L. (1966) *Associate Professor* MD 1960 George Washington University
 Fulcher, Ann S. (1995) *Assistant Professor* MD 1987 Medical College of Virginia of Virginia Commonwealth University
 Hayes, Curtis W. (1987) *Professor* BA 1978 Princeton University; MD 1982 New Jersey Medical School
 Hingsbergen, Elizabeth A. (1991) *Assistant Professor* BA 1981 Northwestern University; MD 1985 Washington University
 Hogge, Jacquelyn P. *Assistant Professor*
 Hom, Mark *Assistant Professor*
 Johnson, Michele H. (1990) *Associate Professor* BA 1975 University of Delaware; MD 1979 Temple University
 Jolles, Howard (1986) *Associate Professor* BA 1971 and MD 1976 Temple University
 Jolles, Paul R. (1992) *Assistant Professor* BA 1977 and MD 1983 Temple University
 Kubal, Wayne S. (1991) *Assistant Professor* AB 1973 Princeton University; MD 1978 University of Wisconsin, Madison
 Laine, Fred J. (1986) *Associate Professor* BS 1971 Colorado State University; MS 1973 Columbia University; MD 1980 University of Monterrey, Mexico
 Little, Sherill T. *Instructor*
 Liu, Chung I. *Assistant Professor*
 Messmer, James M. (1981) *Associate Professor and Associate Dean for Academic Affairs, School of Medicine* BS 1968 Rockhurst College; MD 1972 St. Louis University; MA 1995 Virginia Commonwealth University
 Mulvaney, James A. (1996) *Assistant Professor* PhD 1982 University of Colorado

Narla, Lakshmana Das (1988) *Associate Professor* MBBS 1976 Guntur Medical College, India
 Pieters, Philip C. (1994) *Assistant Professor* MD 1988 University of Maryland
 Prasad, Uma R. (1989) *Assistant Professor* BS 1972 RNT Medical College; MD 1976 All India Institute of Medical Sciences; MD 1989 Medical College of Virginia of Virginia Commonwealth University
 Proto, Anthony V. *Professor*
 Quagliano, Peter V. *Assistant Professor*
 Rowell, Criag Gorlick *Assistant Professor*
 Shaw, Chung I. *Professor*
 Shaw De Paredes, Ellen S. (1994) *Professor* MD 1978 West Virginia University
 Smoker, Wendy R.K.(1990) *Professor* BS 1971,MS 1972 and MD 1977 University of Iowa
 Spottswood, Stephanie E. (1991) *Assistant Professor* BA 1972 University of Michigan; BS 1977 Montgomery College; MSPH 1978 and MD 1987 University of North Carolina,Chapel Hill
 Szucs, Richard A.(1990) *Assistant Professor* BS 1978 Wheaton College; MD 1982 Jefferson Medical College
 Tabb, Heidi S. *Instructor*
 Tisnado, Jaime (1977) *Professor* BS 1957 and MD 1964 San Marcos National University, Peru
 Turner, Mary Ann (1975) *Professor* BS 1967 and MD 1971 University of Alabama
 Wilkinson,Diane L. *Assistant Professor*
 Wright, Terry Lewis *Assistant Professor*

Division of Nuclear Medicine

James L. Tatum

Professor of Radiology and Radiation Sciences and Division Head (1978) BS 1969 College of William & Mary; MD 1973 Medical College of Virginia of Virginia Commonwealth University

Fratkin,Melvin J. (1969) *Professor of Radiology, Radiation Sciences and Internal Medicine* BA 1960 Duke University; MD 1964 Medical College of Virginia
 Hirsch, Jerry I. (1970) *Professor* BS 1967 Brooklyn College of Pharmacy; MS 1969 and PharmD 1970 Philadelphia College of Pharmacy and Science
 Kalen, Joseph D. (1992) *Assistant Professor* BS 1978 State University of New York;MS 1982 and PhD 1987 Ohio State University
 Quint, Roger I. (1986) *Assistant Professor* AA 1982 Richard Bland College;BS 1984 and MS 1986 Virginia Commonwealth University

Division of Radiation Physics and Biology

Panos P. Fatouros

Professor and Division Head(1978) BS 1968 University of Florida; PhD 1975 Ohio State University

Corwin, Frank D. (1987) *Instructor* BS 1985 Virginia Polytechnic Institute and State University; MS 1994 Virginia Commonwealth University
 Kraft, Kenneth A. (1983) *Assistant Professor* BS 1977 Westminster College;MS 1979 and PhD 1982 University of Rochester
 Wilson, John D. (1970) *Associate Professor* BA 1960 Carleton College; MA 1963 and PhD 1966 University of Illinois

Division of Radiology Education

Russell A. Blinder

Professor of Radiology (1990) BS 1975 University of Vermont;MD 1979 Pennsylvania State University

Department of Surgery

Harvey J. Sugerman

Professor and Interim Head

Abubaker, A.Omar* *Assistant Professor*
 Banks, W. L.* *Professor*

Bogler, Oliver* *Assistant Professor*
 Campbell,Robert L.* *Associate Professor*
 Casey, Thomas H. (1982) *Assistant Professor* MBA 1979 University of Richmond;PhD 1995 Virginia Commonwealth University
 Chandler, Leonard* *Assistant Professor*
 Choi,Sung C.* *Professor*
 Decker, Michael J.* *Associate Professor*
 Diener, Randy M.* *Assistant Professor*
 Droter, Lisa G. (1994) *Research Assistant* BSN 1987 University of Tennessee; 1999 Indiana University
 Ellenbogen, Kenneth A.* *Professor*
 Ellis, Earl F.* *Professor*
 Friedman,Richard B.* *Assistant Professor*
 Garrett,Algin B.* *Professor and Department Head*
 Giglio, James A.* *Associate Professor*
 Guttu,Arnold L.* *Assistant Professor*
 Hsia, Peng-Wie* *Assistant Professor*
 Jakoi,Emma* *Associate Professor*
 King, Anne L.*
 Laskin,Daniel*
 Levenson, James L.*
 Merchant,Randall E.*
 Moray, Lawrence*
 Olbrisch,Mary E.*
 Povlishock, John T.*
 Smoker, Wendy R.K.* *Professor*
 Strauss, Robert A.*
 Sypniewski,Edward*
 Tawes, John W.*
 Tolman, David E.*
 Wolman,Richard L *

Emeriti Faculty

Bosher, Lewis H.,Jr. *Professor Emeritus* BS 1935 University of Virginia; MD 1940 Harvard University
 Graham, A. Stephens *Associate Clinical Professor Emeritus* MD 1925 University of Minnesota
 Haynes, Boyd W., Jr. *Professor Emeritus* MD 1941 University of Louisville
 Horsley, J. Shelton, III *Professor Emeritus* BS 1950 and MD 1953 University of Virginia
 Koontz, Warren W., Jr. *Professor Emeritus* BA 1953 Virginia Military Institute;MD 1957 University of Virginia
 Lawrence, Walter , Jr. *Professor Emeritus* BS 1944, SB 1945 and MD 1948 University of Chicago
 Lee, Hyung Mo *Professor Emeritus* BS 1945 Keijo Imperial University, Korea;MD 1949 Seoul National University, Korea
 Lower, Richard R. *Professor Emeritus* AB 1951 Amherst College; MD 1955 Cornell University
 Smith, Vernon *Professor Emeritus*
 Williams, Carrington, Jr. *Clinical Professor Emeritus* BA 1938 University of Virginia;MD 1942 Harvard University

Clinical Faculty

John M.Armitage
 William H.Atwill
 Robert L. Banner
 Wyatt S. Beazley
 H.Alan Bigley
 Elwood B. Boone
 Allen S. Boyer
 Peter W. Brown
 Ray E.Burger
 Charles W. Byrd
 Thomas Carrico
 Richard M. Clary
 Joseph A.Concodora
 Eric Paul Cote
 Ronald K.Davis
 Thomas M.Dewire
 Austin Dodson
 George B. Duck
 Martin T. Evans
 Frazier W. Frantz
 William E.Gayle
 George Thomas Gillies
 John M.Armitage
 Abdalla Bandak
 Robley D. Bates
 Michael Bermant
 Gary Bokinsky
 L. Paul Bosher
 Joseph V. Boykin,Jr.
 Gilbert Bryson
 George W. Burke
 Joshua M.Careskey
 Lawrence Christie
 Custis L.Coleman
 David Cornell
 James Darden
 Robert W. Deconti
 Rebecca Dignan
 Otis W. Doss
 Harry Easterly
 John Feminella
 L.Arnold Frederick
 F. Roosevelt Gilliam
 Patricia Gomuwka

Richard W. Graham
Lonny Green
Richard A.Hoefer
Neil E. Hatcher
Joseph F. Kell
George A.Knaysi
Maniloth G. Kurup
Geoffrey A.Larsen
Gregg Leslie Londrey
Amadeo Marcos
Carey McKain
James McTamanev
Wilson Merchant
James M.Millis
William R.Morgan
Jennifer K.O'Neill
Lesley Padilla
Caroll T. Petty
James E.Ratliff
William Robertson
Douglas S. Rowe
Julie G. Sharp
Anthony Sliwinski
Leon Smith-Harrison
Edward A. Talman
William S. Tunner
Joan M. Van Camp
James L. Ware
Ronald E.Whitley
Boyd Winslow
Yale H.Zimberg

Peter G. Grain
J. Edward Hill
Charles E.Horton
John W. Hyslop
Anne King
Isaac Koziol
Thomas R. Lanyi
Francis K.Lee
Douglass Ludeman
Bruce Mathern
Joseph E.McKeown
Erick P. Melzig
Wyndell H.Merritt
Ali I.Mohamed
James E.Nevin,III
Kenneth Olshansky
George Parker
Nicholas G. Poulos
Richard D. Redman
Kent L.Rollins
K.Singh Sahni
Robert P. Singer
Maurice J. V. Smith
Campbell G. Stalker
William R.Timmerman
Takashi Uchida
Yangmin Wang
William R.White
Mason M. Williams
Seung Choul Yang

Division of Cardiothoracic Surgery

Albert J. Guerraty

Professor of Surgery and Division Head (1989) BS 1965 and MD 1972 University of Chile

Abd-Elfattah, Anwar S. (1988) *Professor* BS 1970 and MS 1974 Alexandria University, Egypt; PhD 1979 Mississippi State University
Benton, John E. (1996) *Instructor* BS 1971 Randolph-Macon College; BMS 1977 Duke University
Brooks, James W. (1956) *Professor* BS 1943 The Citadel; MD 1946 Medical College of Virginia
Embrey, Richard P. (1995) *Assistant Professor* BA 1980 and MD 1983 Johns Hopkins University
Guerraty, Albert J. (1989) *Associate Professor* BS 1965 and MD 1972 University of Chile
Maier, George W. (1992) *Assistant Professor* BS 1978 Loyola College; MD 1982 Duke University
Salter, David R. (1989) *Associate Professor* MD 1974, FRCS 1981 and FRCS 1983 University of Toronto

Division of General and Trauma Surgery

Harvey J. Sugerman

Professor and Division Head (1978) BA 1959 Johns Hopkins University; MS 1962 and MD 1966 Jefferson University

Barry, Daniel P. (1996) *Instructor* BS 1986 and MHA 1990 Virginia Commonwealth University
DeMaria, Eric J. (1990) *Assistant Professor* BA 1983 and MD 1983 Boston University
Gould, James H. (1983) *Instructor* 1992 Virginia Commonwealth University; AAS 1994 J. Sargeant Reynolds Community College
Hibbert, Jacqueline M. (1992) *Assistant Professor* BS 1975, MS 1977 and PhD 1989 University of the West Indies
Kellum, John M.(1983) *Professor* MD 1969 Johns Hopkins University
Newsome, Heber H. *Professor and Division Head*
Savas, Jeannie F. *Assistant Professor*
Schweitzer, Michael A. *Assistant Professor*
Wolfe, Luke G. (1982) *Instructor* BA 1980 Bridgewater College; MS 1982 Medical College of Virginia of Virginia Commonwealth University

Division of Neurosurgery

Harold F. Young

Professor, Eminent Scholar and Division Head(1972) BA 1959 and MD 1963 Ohio State University

Broaddus, William C. (1991) *Assistant Professor* BA 1975 Cornell University; PhD 1982 and MD 1984 Case Western Reserve University
Bullock, M. Ross (1992) *Associate Professor* MB ChB 1975 Birmingham University; FRCS 1980 and FRCS 1983 Royal College of Surgeons of Edinburgh
Crute, Stephen L. (1987) *Research Assistant* 1969 University of Richmond
Dunbar, Jana G. (1981) *Research Assistant* BS 1979 and MS 1987 Virginia Commonwealth University
Helmick, Katherine M. *Research Assistant*
Holloway, Kathryn L. (1990) *Assistant Professor* BS 1980 and MD 1984 Rutgers University
Liemberger, Alyssa E. *Research Assistant*
Lutz, Harry A., III (1979) *Associate Professor* BS 1967 University of Virginia; MA 1970 and PhD 1975 Temple University
Lyeth, Bruce G. (1984) *Associate Professor* BA 1974 Christopher Newport College; MS 1976 Radford University; PhD 1986 Virginia Commonwealth University
Marmarou, Anthony (1982) *Professor and Eminent Scholar* BS 1959 Drexel University; MS 1966 University of Pennsylvania; PhD 1973 Drexel University
Phillips, Linda L. (1988) *Assistant Professor* BS 1975 University of Richmond; PhD 1980 Wake Forest University
Ward, John D. (1991) *Professor* BS 1966 Xavier University; MD 1970 University of Cincinnati
Wei, Xin *Research Assistant*

Division of Pediatric Surgery

Charles E. Bagwell

Professor and Division Head BS 1972 Wake Forest University (1993) MD 1976 Bowman Gray School of Medicine

Haynes, Jeffrey H. (1996) *Assistant Professor*
Sonnino, Roberta E. (1993) *Associate Professor* BS 1973 University of Michigan; MD 1979 University of Padova at Verona, Italy

Division of Plastic and Reconstructive Surgery

Austin I. Mehrof, Jr.

Associate Professor and Division Head (1972) BA 1964 and MA 1965 Colgate University; DDS 1969 Columbia University; MD 1975 Albany Medical College

Bandak, Abdalla Z. *Assistant Professor*
Cohen, I. Kelman (1972) *Professor* BS 1959 Columbia University; MD 1963 University of North Carolina
Creehan, M. Suzanne *Assistant Professor*
Diegelmann, Robert F. (1972) *Professor* PhD 1970 Georgetown University
Maragh, Hallene A. (1989) *Assistant Professor* MBBS 1972 University of the West Indies, Jamaica
Mehrof, Austin I., Jr. (1982) *Associate Professor* BA 1964 Colgate University; MA 1965 Colgate University; DDS 1969 Columbia University; MD 1975 Albany Medical College
Pozez, Andrea L. (1989) *Assistant Professor* BA 1975 Antioch College; MD 1980 Universidad Autonoma de Guadalajara, Mexico
Sandhu, Baldev S. *Assistant Professor*
Wornom, Isaac L., III (1989) *Associate Professor* BA 1977 Washington and Lee University; MD 1981 University of Virginia
Yager, Dorne R. (1990) *Assistant Professor* BS 1976 Michigan State University; PhD 1985 University of North Carolina, Chapel Hill

Division of Surgical Oncology

Harry D. Bear

Professor, Eminent Scholar and Division Head (1984) BA 1971 Yale University; MD 1975 and PhD 1978 Medical College of Virginia of Virginia Commonwealth University

Karp, Stephen E. (1996) *Assistant Professor* MD 1981 McGill University
Neifeld, James P. (1978) *Professor* BS 1968 Lafayette College; MD 1972
Medical College of Virginia of Virginia Commonwealth University

Division of Transplant Surgery

Marc P. Posner

Professor and Division Head (1984) BA 1971 Bucknell University;
MD 1976 Medical College of Wisconsin

Fisher, Mary Ruth (1988) *Instructor* BS 1986 Medical College of
Virginia of Virginia Commonwealth University
Godkin, Robin R. (1992) *Instructor* BS 1988 Texas A & M University; BS
1990 University of Texas
Ham, John M. (1993) *Assistant Professor* BS 1976 Walla Walla College;
MD 1980 Loma Linda University
Kimball, Pamela M. (1994) *Associate Professor* BS 1978 University of
North Carolina, Chapel Hill; PhD 1981 University of Alabama,
Birmingham
Seaman, David S. (1995) *Assistant Professor* BA 1977 Boston College;
MD 1984 University of Connecticut

Division of Urology

Averch, Timothy D. (1996) *Assistant Professor* BA 1985 University of
Pennsylvania; MD 1989 University of Pittsburgh
Hackler, Robert H. (1971) *Associate Professor* BA 1956 and MD 1960
University of North Carolina
Katz, P. Gary (1982) *Associate Professor* BS 1968 and MD 1972 McGill
University

Division of Veterans Administration Medical Center

Hunter McGuire

Division Head

Division of Vascular Surgery

Raymond G. Makhoul

Associate Professor and Division Head (1991) BS 1978 University
of Michigan; MD 1982 University of Chicago

Fisher, Mary Ruth *Instructor*
Loving, Amy (1996) *Research Assistant* BS 1992 Medical College of
Virginia of Virginia Commonwealth University
Mest, Simon J. (1988) *Assistant Professor* BA 1975 La Salle College;
DPM 1981 Pennsylvania College of Pediatric Medicine

XVII

P A R T

School of Nursing

Nancy F. Langston

Dean (1991) BSN 1966 University of Arkansas; MN 1972 Emory University; PhD 1977 Georgia State University

W. Richard Cowling, III

Associate Professor and Associate Dean (1993) BSN 1972 University of Virginia; MS 1979 Medical College of Virginia of Virginia Commonwealth University; PhD 1983 New York University

Janet B. Younger

Professor and Associate Dean for Undergraduate Programs (1984) BS 1967 Medical College of Virginia; MEd 1970 University of Virginia; MS 1972 Virginia Commonwealth University; PhD 1984 University of Virginia

Anthony J. DeLellis

Assistant Dean for Administration (1985) BA 1970 University of Delaware; MA 1973 Central Michigan University; EdD 1977 University of Virginia

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then the educational program has evolved to multiple programs at the baccalaureate, master's, and doctoral degree levels. The undergraduate program contains BS degree options for traditional students at the sophomore- or junior-level, an accelerated second degree option for those with a BS degree in another field and an option for registered nurses seeking completion of a BS degree. An active research program and continuing education opportunities are included. The School of Nursing continues to be a leader in nursing education in Virginia.

Programs

Bachelor of science, master of science, post-master's certificate, and doctor of philosophy degree programs are offered through the School of Nursing. For information regarding the graduate programs, see the *Graduate Bulletin* available on the Web at <http://www.vcu.edu/gradweb>.

Complete information regarding curriculum and admissions may be obtained by writing to the Office of Enrollment and Student Services, School of Nursing, Medical College of Virginia of Virginia Commonwealth University, P.O. Box 980567, Richmond, VA 23298-0567.

Facilities and Resources

The faculty and administrative offices of the school are housed in the Nursing Education Building, 1220 East Broad Street. Additionally, this building has a nursing

clinical resource laboratory, computer laboratory, and classrooms equipped with a full range of audio-visual equipment. Both graduate and undergraduate courses are also scheduled in other classrooms on campus.

The clinical laboratories for nursing courses are conducted in the MCV Hospitals of Virginia Commonwealth University and in numerous other hospitals and health agencies in the area. Students are given a diversity of experiences in hospital and community-oriented nursing.

Accreditation

The baccalaureate degree program in nursing is accredited by the National League for Nursing Council of Baccalaureate and Higher Degree Programs. The program is approved by the Virginia State Board of Nursing, and graduates are eligible to take the registered nurse licensing examination.

The master's degree program is accredited by the National League for Nursing Council of Baccalaureate and Higher Degree Programs. The Nurse Practitioner Concentrations (ANP, FNP, WNP, PNP) are approved by the joint boards of nursing and medicine of Virginia.

Nursing Alumni

All graduates are eligible for membership in the Nursing Alumni Division of the Medical College of Virginia Alumni Association of Virginia Commonwealth University. The purpose of the division is to support and promote the School of Nursing. The division also provides support within the University to promote and encourage the development of nursing services of the highest possible quality, to stimulate professional growth, and to promote cooperation and fellowship among nursing alumni and students.

Annual Lectureships

Outstanding scholars are brought to the campus through a variety of resources. Students in the School of Nursing have access to special programs of an intellectual and cultural nature on both campuses of the University.

The Annual Nursing Lectureship, established in 1966 by contributions from alumni and friends of the School of Nursing, brings to the campus each year a person of national stature in the field of nursing. Alumni and faculty plan and implement the lectureship, which serves as an open forum to many public speakers in the health fields.

The Yingling Visiting Scholar Program was established in 1981 by alumni and friends of Dr. Doris B. Yingling upon her retirement, in recognition of her many years of service as dean of the School of Nursing. The fund supports visits by eminent scholars to the School of Nursing.

School Honors and Awards

Sigma Theta Tau. The School of Nursing inducted its first members in the fall of 1976. This local honor society was accepted as a chapter of the international nursing honor society, Sigma Theta Tau, in the fall of 1977. The chapter, known as Gamma Omega, installed its first members in the fall of 1978. The purposes of Sigma Theta Tau are to recognize superior achievement and leadership qualities, to foster high professional standards, and to strengthen commitment to the ideals and purposes of the profession.

Becky Godwin Fund. This fund was established by former Dean Doris B. Yingling in 1978 following completion of the Honorable Mills E. Godwin, Jr.'s, second term as Governor of Virginia. The fund was established in memory of former Governor and Mrs. Godwin's only daughter, Becky. The interest on the endowment contributed to the School of Nursing by Dr. Yingling provides funds to enhance student professionalism in nursing for individuals enrolled in the undergraduate and graduate programs. Awards from the fund are made on an annual basis by the dean.

Yingling Senior Achievement Award. Gifts to the institution to honor former Dean Doris B. Yingling have been used to establish an annual award to a senior student in the School of Nursing. Recognition is based on outstanding leadership ability and potential professional growth as determined by a selection of faculty and students.

Mable Montgomery Award. This award was established through gifts of faculty and students in honor of Miss Mable E. Montgomery, executive secretary of the Virginia State Board of Nursing, 1949-70. The award alternates annually between a senior student and a faculty member. Leadership, excellence in nursing, and outstanding personal qualities are considered in selecting the recipients.

Marguerite G. Nicholson Award. This award was established by alumni and friends of the school to honor a beloved alumna and former faculty member. The award is presented annually to a graduating senior student who best demonstrates the humanitarian qualities of unselfishness, helpfulness to others, consideration, humility, and loyalty to the school.

Mayme B. Wilson Lacey Award. Established by alumni of the former St. Philip School of Nursing, this award honors an outstanding alumna of the school who served for many years as assistant director of nursing services for MCV Hospitals. The recipient, a senior nursing student, must be a well-rounded individual committed to nursing as a profession, who gives consistently good nursing care, has the ability to work well with the health team, and shows promise of supporting professional organizations.

Temple Memorial Award. The senior and junior classes, 1976-77, and the alumni from the School of Nursing established this award in memory of President and Mrs. T. Edward Temple. The award is given annually to a graduating student in the master's degree program. The recipient must possess characteristics that demonstrate exemplary performance in the advocacy role for the consumer of health care services and for the profession of nursing.

Martha M. Borlick Research Award. This award was established in 1980 by an alumna in honor of Dr. Borlick, who served as chair of the Department of Community Health Nursing from 1970-1978. The annual award honors a graduate student in nursing research as evidenced by the master's thesis.

Registered Nurse Student Award. The Registered Nurse Student Award is given in recognition of performance and achievement within the School of Nursing. The award is presented annually to a graduating senior who demonstrates excellence in clinical expertise, leadership, and personal qualities. This award is given with funds provided by faculty in recognition of the increasing number of registered nurses returning for baccalaureate degrees.

Student Nurses' Association Award. Initiated by members of the organization, this award is given in recognition of outstanding participation in the Student Nurses' Association. The award is presented to a senior SNA member who has demonstrated leadership, dedication, and enthusiasm for the nursing profession through involvement in the organization.

Financial Assistance

Financial assistance is available. Information may be obtained by writing to the Office of University Student Affairs/Financial Aid, Medical College of Virginia of Virginia Commonwealth University, P.O. Box 980244, Richmond, VA 23298-0244.

Bachelor of Science Program

The School of Nursing has two tracks in the baccalaureate program: (1) the traditional, and (2) the RN-BS completion. High school students wishing to attend Virginia Commonwealth University for the entire four years should apply to the pre-nursing program in VCU's College of Humanities and Sciences. Further information on the University's pre-nursing program is provided in the "College of Humanities and Sciences" section of this *Bulletin*.

Admissions

Applications for admission are welcomed from men and women from any cultural or ethnic background who are interested in a career in professional nursing. Admission into the School of Nursing is competitive. Minimum admission criteria require that an applicant must be eligible for readmission to or in good standing at the last college attended; have a minimum TOEFL score of 550 if they do not use English as their natural

language; and have a minimum grade-point average of 2.5 based on a scale of 4.0. Grades lower than "C" in any required courses are not acceptable. Admission GPA is calculated on courses required for the School of Nursing. Applicants should submit SAT, ACT, or GRE scores. All applicants to the undergraduate program must have a minimum of 700 (combined original norm or 830 recentered norm) on the SAT or a comparable score on the GRE or ACT to be considered for admission to the program. Applicants are required to complete an application and submit the required transcripts, references and standardized test scores by January 15 for traditional applicants and March 15 for RN-BS applicants. Applications may be obtained from the Office of Undergraduate Admissions, P.O. Box 980632, Virginia Commonwealth University, Richmond, VA 23298-0632, (804) 828-0488.

Pre-nursing candidates seeking admission to the freshman class at Virginia Commonwealth University may receive preliminary admission to the School of Nursing. Students interested in preliminary admission should present a minimum high school GPA of 3.2, rank in the top quarter of their class, and have combined SAT scores above 1100 after recentering. At the end of the first semester of the freshman year, the student should have a GPA of 3.0 or greater on the first semester of full-time study at VCU. Students must complete all pre-nursing requirements prior to nursing school entry in the fall semester of the sophomore year and must have at least a "C" in all courses. Students who fail to achieve a 3.0 GPA at the end of the first semester of the freshman year will be ineligible to automatically transfer into the School of Nursing without a second application.

Applicants for admission to the Undergraduate Program who wish to be considered for early acceptance will be considered if the following criteria are met: (1) submission of the complete application by November 1; (2) GPA of at least 3.4; and SAT (or equivalent) scores of at least 1100 on recentered scores.

Applicants who are RN's and who seek a baccalaureate degree apply to the RN-BS Completion Program. In addition to traditional admission criteria, applicants must meet the following requirements to be considered: (1) be graduates of state-approved diploma or associate degree programs in nursing; (2) hold a current Virginia License to practice professional nursing.

In addition to taking courses, RN students may establish credit toward the baccalaureate degree in several ways: (1) by portfolio; (2) through transfer of credit from other colleges; and (3) through proficiency examinations using the College Level Examination Program (CLEP) for general education and through National League of Nursing standardized examinations for anatomy, physiology, microbiology and nutrition. Information about the CLEP tests may be obtained from the CLEP Administrator, Office of Community Programs, Virginia Commonwealth University, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420. CLEP tests are given on a monthly schedule, and arrangements to be tested may be made one month prior to the testing date. Subject examinations are available in multiple areas as listed in information available for the College Entrance Examination Board. Students may earn full course credit by examination for general education courses.

Registered nurses who have achieved baccalaureate degrees in another discipline may apply to the MS program in nursing.

Curriculum

In the traditional program, the freshman year may be taken at the academic campus of VCU or at any other accredited college or university. It is the applicant's responsibility to seek advice from the School of Nursing on courses taken prior to admission. Students transferring from another college or university will enter the program as sophomores.

Fifty-six semester hours of general education courses are required for graduation.

General Education Requirements

- 1. Communicating**
Prerequisites: English Composition 3 credits and English 200 or its equivalent
- 2. Ethics**
Prerequisite: Ethics or Philosophy 3 credits
- 3. Quantity and Form**
Prerequisite: College-level math, statistics or algebra 3 credits
- 4. Science and Technology**
Prerequisite: Biology 4 credits, Anatomy 4 credits, Physiology* 4 credits, Microbiology* 4 credits, Nutrition 3 credits, Laboratory Science** 4 credits
- 5. Interdependence**
Prerequisite: Sociology 3 credits; humanities elective (e.g., foreign language, history) 6 credits
- 6. Visual and Performing Arts**
Prerequisite: A course in the arts from the approved list provided by the School of the Arts; 3 credits (see the "School of the Arts," Part X of this *Bulletin* for the approved list)
- 7. Humanities and Social Sciences**
Prerequisites: Psychology 3 credits, Developmental Psychology 3 credits, and general electives 3 credits

* Physiology and microbiology credits must be earned within 10 years preceding admission.

** If high school chemistry or its equivalent is not passed with a "C" or better, the laboratory science must be chemistry.

Traditional Program

Honors sections are available for a number of courses. A typical program for the traditional program is as follows:

Freshman Year, Fall Semester	<i>Credits</i>
Composition	3
Biology	4
Mathematics or statistics	3
Psychology	3
Sociology	3
	16
Freshman Year, Spring Semester	
NUR 100 Risk Appraisal and Health Promotion in Today's World	3
Nutrition	3

Humanities	3
Laboratory Science	4
Anatomy	4
	<hr/>
	17

Sophomore Year, Fall Semester

NUR 261 Health Assessment for Nursing Practice	3
Developmental Psychology	3
Physiology	4
Philosophy/Ethics/Logic/Critical Thinking	3
Visual/Performing Arts	3
	<hr/>
	16

Sophomore Year, Spring Semester

NUR 201 Concepts of Nursing	3
NUR 202 Technologies of Nursing Practice	3
Microbiology	4
ENG 200 Composition and Rhetoric II	3
NUR 370 Theory and Research in Clinical Practice	3
	<hr/>
	16

Junior Year, Fall Semester

NUR 365 Nursing Science I	3
NUR 335 Nursing of Women	6
NUR 345 Nursing of Children	6
Humanities	3
	<hr/>
	18

Junior Year, Spring Semester

NUR 366 Nursing Science II	3
NUR 325 Nursing of Adults I	6
NUR 355 Psychiatric-Mental Health Nursing	6
	<hr/>
	15

Senior Year, Fall Semester

NUR 425 Nursing of Adults II	6
NUR 485 Managerial Theory for Nursing Practice	3
NUR 486 Nursing Management Practicum	2
Upper division or nursing elective	3
	<hr/>
	14

Senior Year, Spring Semester

NUR 405 Nursing Management of the Long-Term Care Client	3
NUR 415 Community Health Nursing	6
NUR 475 Professional Issues in Nursing	3
NUR 496 Advanced Clinical Practicum	3
	<hr/>
	15

RN-BS Completion Program

The General Education Requirements are the same for the RN-BS Completion program. Fifty-six semester-hours of general education courses are required for graduation. The following is a typical curriculum plan for the RN-BS completion student:

Fall Semester

NUR 302 Dynamics of Professional Nursing Practice*	4
NUR 261 Health Assessment for Nursing Practice	3
NUR 370 Theory and Research in Clinical Practice	3

Spring Semester

NUR 415 Community Health Nursing	6
NUR 405 Nursing Practice in Long-Term Care	3
Upper Division Elective	3

Fall Semester

NUR 485 Managerial Theory for Nursing Practice	3
NUR 486 Nursing Management Practicum	2
NUR 475 Professional Issues in Nursing	3
Upper-division credits will be awarded after successful completion of NUR 302	36

Total required Nursing courses	<hr/>	66
--------------------------------	-------	----

Commuting and Community Practice. Students are assigned to a variety of hospitals and health agencies. Occasionally, these assignments may be during evening hours. Transportation is sometimes available to reach these assignments, but use of an automobile is often necessary, especially in community health nursing. Transportation costs vary widely each semester and may range from very little to more than \$100. Students who anticipate need of financial assistance for transportation costs should apply to the Office of University Student Affairs/Financial Aid in advance.

Academic Regulations**Progression**

The minimum passing grade in the general education courses and the nursing major is a "C." Any nursing student who receives less than a "C" in any course must repeat the course with a "C" or better. Progression to the next level of clinical courses is based upon satisfactory completion of courses of the current year and a cumulative grade-point average of not less than 1.91. Courses at the next level in the nursing major without a clinical component may be taken before students officially progress to that level. Appeal of all progression issues is made to the Undergraduate Admission, Policy and Progression Committee. The clinical laboratory grading system is satisfactory or unsatisfactory. Unsatisfactory clinical application results in a grade of "F" for the course.

A student may fail a clinical course prior to the completion of the course under certain circumstances. A student whose conduct is judged to be clinically unsafe may be dismissed at any time from a clinical unit. Unsafe clinical performance is defined as behavior that is actually or potentially injurious to patients or staff and is out of the range of ordinary student mistakes. Dismissal for the remainder of the course results in a failing grade for the course as does any failure to meet course objectives. Further, any student who has been convicted of a felony may be ineligible for licensure as a registered nurse in Virginia. Students or applicants should address any questions of this nature directly to the Virginia Board of Nursing.

There are additional requirements for satisfactory progression in the School of Nursing and all students are responsible for compliance with additional school policies, which are listed in the *School of Nursing Policy Manual*, available on the School of Nursing home page.

Readmission

Students dismissed from the school or University who wish to return must reapply for admission and be considered in relation to all other applicants. The applicant

must then meet all criteria for admission and graduation that apply at readmission.

Completion of Degree Requirements – Time Limit

Once the student enrolls in the School of Nursing, the degree requirements must be completed within six calendar-years. The credentials and programs of a candidate unable to meet this requirement may be evaluated by the Undergraduate Admission, Policy and Progression Committee upon request. Such a candidate may have to meet additional requirements established during the interval since matriculation. All students must be enrolled in the School of Nursing for the final semester of study in order to graduate.

CPR

Students entering the School of Nursing must be certified in cardiopulmonary resuscitation (CPR) before they begin their first clinical nursing course. CPR certification must include:

- one- and two-rescuer CPR;
- CPR for infants, children and adults; and
- rescue breathing for choking infants, children, and adults.

Students are required to show evidence of CPR certification valid to the end of that semester to the Office of Enrollment and Student Services before the first clinical day. Those who are not certified will not be allowed to participate in the clinical laboratory and will be considered to have an unexcused absence.

TB Screening

All nursing students will have an annual TB screening. Students are required to show evidence of this annual screening. Those students who have not had their annual screening will not be allowed to participate in the clinical laboratory and will be considered to have an unexcused absence.

Hepatitis B Vaccination

All nursing students enrolled in clinical courses are required to complete the Hepatitis B vaccination series or to provide proof of a positive antibody titer. The first injection of the series must be received prior to matriculation into the School of Nursing.

Separation from the School

A student who wishes to withdraw from the School of Nursing should discuss the plans with the associate dean for the undergraduate program. Before leaving the school, the proper forms must be obtained from the registrar and completed by the student. Failure to follow this procedure may prevent readmission to the School of Nursing at a later date.

Graduate Degree Programs

The School of Nursing offers programs of study leading to the master of science, post-master's certificate and doctor of philosophy degrees.

Master's Program

The master's program is designed to offer general core content requisite for advanced practice in nursing as well as content aimed at preparation in a specialty concentration. The program is designed to prepare individuals for certification as nurse practitioners and/or clinical nurse specialists. The specialty areas are: adult health acute care, adult health primary care, adult health immunocompetence, child health, family health (weekday and weekend options), nursing systems (clinical nurse manager and nurse executive), psychiatric mental health, and women's health.

Accelerated Second Degree Program

In response to the growing number of individuals with bachelor's degrees in other disciplines who are now seeking a career in nursing, the school offers a graduate program where an individual can earn a bachelor's and master's degree in nursing. Students in the Accelerated Second Degree Program take courses in the undergraduate and master's program until licensure as a RN is obtained. It is anticipated that this will occur at the end of the fifth semester. The master's degree is awarded after 2-4 semesters of additional study depending on the area of concentration. This program begins in the summer (see section entitled, "Master's Program").

Post-Master's Certificate Program

Individuals with a master's of science degree in nursing may take courses in the Master's Program in order to be eligible for the certification exam for advanced nursing practice as a nurse practitioner. The plan of study is dependent on prior master's work. Areas of study offered are: adult health, child health, family health, and women's health.

Doctoral Program

The goal of the doctoral program in nursing is the preparation of scholars to develop knowledge in the discipline of nursing. Substantive areas of study are: human health and illness, nursing systems, and biology of health and illness.

See the *Graduate Bulletin* for a detailed description of all graduate programs.

Department of Adult Health Nursing

Patricia T. Gray

Associate Professor and Department Chair (1996) BS 1974 Tunghai University, China; MS 1976 University of North Carolina, Chapel Hill; PhD 1982 University of Utah

Boyle, Anne H. (1991) *Instructor* BSN 1971 Duke University; MN 1977 University of South Carolina; PhD 1996 University of Virginia

Grap, Mary Jo E. (1984) *Assistant Professor* BSN 1972 Kent State University; MS 1977 University of Colorado; PhD 1986 Georgia State University

Langston, Nancy F. (1991) *Dean* BSN 1966 University of Arkansas; MN 1972 Emory University; PhD 1977 Georgia State University

Lipp, Susan L. (1987) *Instructor* BSN 1974 University of Virginia; MSN 1979 University of North Carolina, Chapel Hill

McCain, Nancy L. (1995) *Associate Professor* BSN 1973 University of Mississippi; MN 1976 University of Mississippi; DSN 1983 University of Alabama, Birmingham

Munro, Cindy L. (1992) *Assistant Professor* BSN 1983 Millersville University of Pennsylvania; MS 1984 University of Delaware; PhD 1992 Medical College of Virginia of Virginia Commonwealth University

Pryor, Ann (1996) *Instructor* BSN 1972, MS 1991 and NP 1992 Medical College of Virginia Commonwealth University

Salyer, Jeanne (1986) *Assistant Professor* BSN 1972 University of Alabama; MSN 1975 University of Alabama; PhD 1992 Medical College of Virginia of Virginia Commonwealth University

Venegoni, Sandy (1994) *Assistant Professor* BSN 1965 St. Louis University; MN 1971 Emory University; PhD 1991 Medical College of Virginia of Virginia Commonwealth University

Waters, Haidee F. (1982) *Assistant Professor* BSN 1969 Alfred University; MSN 1973 City University of New York, Hunter College; DNS 1988 Catholic University

Part-time Faculty

Kathleen Anderson
Patricia E. Garey
Rita Jablonski
Janice Neil

Vicky Fisher
Tanya Huff
Linda C. Kendall
Patricia A. Stuckey

Adjunct Faculty

Marian S. Altman
Kathleen K. Barksdale
Susan J. Bodin
Abbi J. Bruce
Susan M. Burger
Andrea K. Cheatham
Patrick J. Coyne
Heather L. Craven
Denise D. Farleigh
Marilyn L. Fishel
Marie F. Gerardo
Connie A. Glass
Diane L. Hanna
Janet K. Herr
Kathleen B. Jarrell
Ann L. Kaplan
Janice E. Keitz
Norah R. Knutsen
Nancy B. Leahy
Mary Ann Lutz
Robert T. Melady
Mary Jane Michael
Kathy B. Miller
Deborah S. Mobley
Nancy K. Overstreet
Pamela L. Parsons
Lisa J. Pettrey
Margaret N. Pipkin
Janice M. Renick
Perry L. Richmond
Judith T. Rocchiccioli
Arlene M. Rollins
Laura Savage
Myra C. Schindler
Jane T. Settle
Katharine K. Spiegel
Linda Thurby-Hay
Ann L. Unholz
Susan T. Webb
Jean C. Whiting
Linda H. Williams
Marcela J. Woogen-Fisher

Kathleen M. Anderson
Marian L. Baxter
Cathy M. Boze
Jan A. Buker
Cheryl A. Carlson
Tina D. Collins
Lynn H. Coyner
Suellen DeWitt
Marcia E. Felker
Sally S. Gammon
Cynthia J. Gifford
Beth A. Glassford
Georgia Helmick
Mary D. Jacobs
Joann R. Johnson
Sonja C. Kees
Linda C. Kendall
Catherine D. Lantz
Dianne L. Locke
Jane K. McMahon
Jill M. Mercier
Wanda H. Miller
Melinda J. Miller
Amie Modigh
Gwendolyn G. Parker
Deborah H. Perkins
Frances L. Phillips
Margot A. Regen
Edna M. Rensing
Susan H. Robinson
Karen A. Roesser
Renata C. Sampson
Linda L. Sayles
Jane W. Schultz
Lynette D. Short
Denise C. Thornby
Mary Beth Tombes
Rebecca E. Walters
Jo L. Wheeler
Bobbie A. Williams
Barbara L. Wiltshire

Emeriti Faculty

Exley, Ethelyn, E.
Kissinger, Jeanette F. *Professor Emerita* BS 1953 College of St. Catherine; MED 1955 University of Minnesota; EdD 1979 University of Virginia
Olgas, Marya
Yingling, Doris B.

Department of Maternal Child Nursing**Judith A. Lewis**

Associate Professor and Department Chair (1993) AB 1966 Brandeis University; BS 1968 Boston University; MS 1977 University of California, San Francisco; PhD 1985 Brandeis University

Hearington, Debra K. (1995) *Assistant Professor* BS 1979 Mary Washington College; BS 1981 and MS 1985 Medical College of Virginia of Virginia Commonwealth University

Henry, JoAnne K. (1978) *Associate Professor* BSN 1968 University of Virginia; MA 1971 New York University; EdD 1979 University of Virginia

Lyon, Debra E. (1995) *Instructor* BSN 1984 and MSN 1993 Medical College of Virginia of Virginia Commonwealth University

Pickler, Rita H. (1990) *Assistant Professor* BSN 1979 and MSN 1981 University of North Carolina, Greensboro; PhD 1990 University of Virginia

Raines, Deborah A. (1989) *Assistant Professor* BSN 1978 Syracuse University; MSN 1982 University of Pennsylvania; PhD 1992 Virginia Commonwealth University

Sawin, Kathleen J. (1987) *Associate Professor* BS University of North Dakota; MS 1976 University of Minnesota; DNS 1988 Indiana University; MS 1989 University of Wisconsin

Smith, Sheila A. (1991) *Instructor* AAS 1964 Jeanne Mance; BSN 1979 Stephen Austin; MSN 1982 Northwestern University

Tesh, Esther M. (1972) *Associate Professor* BSN 1962 University of North Carolina; MN 1971 University of Pittsburgh; PhD 1971 University of North Carolina, Chapel Hill

Younger, Janet B. (1984) *Professor and Associate Dean for Undergraduate Programs* BS 1967 Medical College of Virginia; MED 1970 University of Virginia; MS 1972 Virginia Commonwealth University; PhD 1984 University of Virginia

Part-time Faculty

Paula Allocca
Leslie Fehan
Sue Taylor

Janet DeHoux
Charles S. Smith
Kimberly B. Walker

Adjunct Faculty

Kathleen M. Akridge
Elizabeth W. Astin
Mary P. Blalock
Imodale Caulker-Burnett
Jennifer C. Condrey
Shelley F. Conroy
Jan W. Dalby
Barbara H. Dunn
Barbara W. Fleming
Kara L. Foster-Weiss
Bethany Geldmaker
Vanona A. Harris
Pamela E. Higgins
Cathy A. James
Nancy S. Keohane
Sharon A. McCoy
Mona D. Milberg
Yvonne G. Newberry
Barbara A. Reyna
Patricia M. Selig
Valerie J. South
Kathy A. Westin
Rebecca Wright
Joy E. Zeh

Catherine D. Allport
Andrea M. Bembry
Jacqueline G. Broyles
Elizabeth Chaisson-Ricker
Sharon A. Cone
Joan Corder-Mabe
Marcia S. Davis
Elaine M. Ferrary
Karen L. Foster-Anderson
Eileen P. Ganhewa
Sandra L. Graves
Nancy L. Harris
Karen M. Hill-Holliday
Gail W. Johnson
Nancy P. Mason
Stephanie G. Metzger
Cara E. Moggo
Judith R. Parker-Falzo
Carolyn S. Ross
Debra P. Shockey
Barbara V. Terrell
Sue C. Wood
Denise J. Young
Judith A. Ziehl

Emeriti Faculty

Bampton, Betsy A. *Associate Professor Emerita* AA 1957 Frostburg State College; BS 1960 Medical College of Virginia; MS 1965 University of Maryland; EdD 1987 College of William & Mary
 Clarke, Bernadine A. *Associate Professor Emerita* BS 1953 Duke University; MS 1975 Medical College of Virginia of Virginia Commonwealth University
 Collins, Judith B. *Associate Professor Emerita* BS 1962 University of North Carolina; MS 1968 Boston University
 Crowder, Dorothy S. *Associate Professor Emerita* BS 1974 and MS 1976 Medical College of Virginia of Virginia Commonwealth University
 Crummette, Beauty D. *Associate Professor Emerita* BS 1958 Medical College of Virginia; MA 1962 Columbia University; PhD 1978 University of Pittsburgh

Department of Nursing Systems, Community and Psychiatric Mental Health Nursing

Inez Tuck

Associate Professor and Chair (1997) BSN 1970 Agricultural & Technical State University, Greensboro; MN 1972 University of Florida, Gainesville; PhD 1980 University of North Carolina, Greensboro; MBA 1995 University of Tennessee, Knoxville

Abraham, Isaac (1991) *Instructor* BSN 1980 Medical College of Virginia of Virginia Commonwealth University; MSN 1990 University of Virginia
 Corley, Mary C. (1986) *Associate Professor* BSN 1960 Marquette University; MSN 1963 Catholic University of America; MA 1972 University of Kentucky; PhD 1975 University of Kentucky
 Cowling, W. Richard, III (1993) *Associate Professor* BSN 1972 University of Virginia; MS 1979 Medical College of Virginia of Virginia Commonwealth University; PhD 1983 New York University
 DeLellis, Anthony J. (1985) *Assistant Dean for Administration* BA 1970 University of Delaware; MA 1973 Central Michigan University; EdD 1977 University of Virginia
 Festa, Laura Meeks (1993) *Assistant Professor* MS 1978 University of South Carolina; EdD 1981 University of South Carolina; MS 1992 Medical College of Virginia of Virginia Commonwealth University
 Mark, Barbara A. (1981) *Professor* BS 1970 Skidmore College; MN 1972 University of Washington; PhD 1982 Case Western Reserve University
 Morrison, Eileen
 Munjas, Barbara A. (1972) *Professor* BS 1959 Ohio State University; MS 1962 Ohio State University; MA 1970 University of Pennsylvania; PhD 1972 University of Pennsylvania
 Thornton, Karen A. (1996) *Assistant Professor* BS 1978 Florida A & M University; MS 1982 University of Michigan; PhD 1994 University of Texas, Austin
 White, Susan G. (1990) *Assistant Professor* BSN 1968 University of Virginia; MS 1975 Medical College of Virginia of Virginia Commonwealth University

Part-time Faculty

Christina A. Harlan	Tamara L. Larson
Monica S. Markowitz	Janice Neil
Roberta P. Seay	Donna K. Shields
Charles S. Smith	Shirley F. Wampler

Adjunct Faculty

Paula N. Allocca	James E. Ames, IV
Patricia B. Bernal	Frances T. Biagioli
Jean M. Bowman	Estelle M. Brodeur
Christine J. Brodsky	Earlene W. Canaan
Marilyn A. Carter	Karen W. Connelly
Judith B. Crown	Patricia Cushnie
Marthlene R. Dorn	Kimberly A. Eggleston
Estena F. Eldridge	Sarah P. Farrell
Pamela R. Faulkner	Stacie W. Fisher
Nancy C. Ford	Beverly T. Geissler
Lauren R. Goodloe	Gayle T. Gwaltney
Kathryn A. Hafford	Kimberly O. Hemphill
Catherine M. Hundley	Elisabeth B. Hutton

Phyllis E. Kirsch
 Susan S. Lynch
 Paulette McKernan
 Barbara J. McRae
 Penny M. Monroe
 Mildred C. Neagle
 C. Fay Parpart
 Sandra W. Ryals
 Patricia B. Singleton
 Margaret E. Supensky
 Susan M. Uhle
 Joyce A. Verran
 Ginger K. Windham
 Carol E. Zogran

Brenda G. Krohn
 Maxcine C. Maxfield
 Dale McMahon
 Trula E. Minton
 Ann M. Morris
 Evelyn R. Nice
 Beverly E. Ross
 Ellen B. Seal
 Shirley Smith-Jones
 Connie L. Thompson-Bodkin
 Margaret D. Vaughan
 Ashby C. Watson
 Rosalyn M. Zahradka

Emeriti Faculty

Barrell, Lorna K.M. *Associate Professor Emerita* BS 1955 University of Minnesota; MS 1970 University of Illinois; PhD 1980 University of Illinois
 Bobbitt, Katherine C. *Associate Professor Emerita* BS 1956 Medical College of Virginia; MS 1965 University of North Carolina; EdD 1987 Nova University
 Francis, Gloria M. *Professor Emerita* BS 1959 Ohio State University; MS 1960 Ohio State University; MS 1970 University of Pennsylvania; PhD 1972 University of Pennsylvania

Courses in Nursing

Listed below are courses in the nursing major. For all courses with a clinical laboratory, the laboratory is designed to develop the clinical and critical thinking skills needed to use the nursing process with specific population groups.

NUR 100 Risk Appraisal and Health Promotion in Today's World. II. Semester course; 3 lecture hours. 3 credits. Elective not limited to nursing majors. Introduces health self-assessment and promotion in today's health care system with emphasis on risk appraisal, the influences of individual and family health beliefs and values, research, and the role of the professional nurse and other members of the health care team.

NUR 201 Concepts of Nursing. II, S. Semester course; 3 lecture hours. 3 credits. Pre or corequisite: NUR 261. Provides a foundation for all clinical nursing courses. Content focuses on human responses to health and illness and those concepts basic to a caring relationship including nursing process, communication, patient teaching, professional responsibility, and systems. Introduces roles of technology in modern health care environments, including management of patient information.

NUR 202 Technologies of Nursing Practice. II, S. Semester course; 6 laboratory hours. 3 credits. Pre or corequisite: NUR 201. Provides opportunities for practice and demonstration of selected skills in the laboratory and on an inpatient unit. Focuses on application of basic concepts of nursing and use of beginning skills in caring relationships. Introduces tools of patient information management and patient monitoring.

NUR 261 Health Assessment for Nursing Practice. I, S. Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Teaches history taking and physical examination with consideration of individual differences. Primary focus is on well adults and variations of normal.

NUR 302 Dynamics of Professional Nursing Practice. I. Semester course; 3 lecture and 1 clinical laboratory hour. 4 credits. Prerequisite: Admission to RN track of the undergraduate nursing program. Expands students' knowledge of concepts of nursing practice focusing on human responses to health and illness, and those concepts inherent in a caring relationship. The role of information technology in modern health care and academic environments will be introduced. This is a transition course from the student's initial education into the baccalaureate program. Successful completion of NUR 302 will validate knowledge of nursing specialties, pathophysiology, and pharmacology. The clinical component provides the opportunity for students to examine their nursing practice using theoretical frameworks and research.

NUR 305 Knowledge Validation by Portfolio. II. Semester course; 3 credits. Elective. RN students only. Involves self-assessment of prior learning for RN. Requires correlation of experiential and theoretical knowledge with objectives of selected nursing courses. Culminates in submission of a portfolio for validation of course-specific knowledge and evaluation for full or partial credit.

NUR 325 Nursing of Adults I. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Junior status. Focuses on the human responses in acute and chronic illness. Includes gerontological nursing concepts. Provides clinical experiences with ill adults and in some specialty areas such as the operating room.

NUR 335 Nursing of Women. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Junior status. Examines health needs of women of all ages with emphasis on health care of the childbearing family and women's gynecologic needs. Includes clinical experiences in labor and delivery, newborn and women's health in a variety of settings.

NUR 345 Nursing of Children. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Junior status. Analyzes children's responses to illness and health care including hospitalization, principles of growth and development, family systems theory, and concepts from child pathophysiology. Clinical experiences reinforce standards of care for both well and ill children.

NUR 355 Psychiatric-Mental Health Nursing. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Junior status. Presents a systems approach to understanding psychiatric-mental health nursing. Focuses on communication with individuals and groups, human responses to major health disorders and prevention strategies.

NUR 365 Nursing Science I. Semester course; 3 lecture hours. 3 credits. Integrates the foundations of nursing diagnosis and intervention derived from pathophysiology, biochemistry, and pharmacology for selected human systems.

NUR 366 Nursing Science II. Semester course; 3 lecture hours. 3 credits. Integrates the foundations of nursing diagnosis and intervention derived from pathophysiology, biochemistry, and pharmacology for selected human systems.

NUR 370 Theory and Research in Clinical Practice. Semester course; 3 lecture hours. 3 credits. Examines nursing theory and research in the development of nursing science. Analyzes selected conceptual models in nursing and applies them to clinical practice. Develops beginning understanding of the research process and ability to critique nursing research for application to clinical practice.

NUR 405 Nursing Practice in the Long-Term Care. Semester course; 3 lecture hours. 3 credits. Focuses on concepts of chronicity, disability, caregiving, rehabilitation and long-term care. Includes all age groups with an emphasis on the frail elderly. Provides clinical experience in a variety of long-term care settings.

NUR 415 Community Health Nursing. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Senior status. Incorporates the community/public health concepts of health promotion and disease prevention. Focuses on family and community and includes concepts of epidemiology, environmental health, health education, advocacy, case management, and interdisciplinary collaboration. Develops experience in the independent role of community nursing.

NUR 425 Nursing of Adults II. Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Senior status. Focuses on patient and family response to complex illness. Applies an ethical decision-making model to clinical situations. Provides opportunities for clinical experience in a variety of hospital settings such as critical care, burn, and transplant units.

NUR 475 Professional Issues in Nursing. Semester course; 3 lecture hours. 3 credits. Focuses on issues of professional practice by exploring the history of nursing, health care policy, codes of ethics, and legal and

economic implications for nursing. Provides opportunities for students to demonstrate competence in group process.

NUR 485 Managerial Theory for Nursing Practice. Semester course; 3 lecture hours. 3 credits. Focuses on principles of management as applied to nursing service units, organization of nursing services, health care systems.

NUR 486 Nursing Management Practicum. 2 seminar and 6 clinical laboratory hours. 2 credits. Pre (by one semester) or corequisite: 485 and senior status. Provides opportunities to apply management principles to nursing practice in a variety of settings and specialty areas.

NUR 487 Leadership Practicum. I, II. Semester course; 3 credits. Prerequisite: Completion of NUR 302. Provides an opportunity for preceptorship with a nurse who is leading the profession. This leadership may be in service, education, health policy or research and is not defined by position but by its influence in the discipline. The student will directly observe what the leader does to plan and deliver effective innovation and analyze the effectiveness. The student will also evaluate herself/himself for leadership potential and construct a personal leadership development plan. This course is not appropriate for students wishing to study organizational management.

NUR 488 Dual Discipline Study. S. Semester course; 3 lecture hours. 3 credits. Prerequisites: Admission to accelerated second degree program or undergraduate degree in another discipline and completion of NUR 201. Focuses on historical and ethical foundations of nursing and their impact on current and future practice in today's political and social milieu. Includes discussion of professional behavior and health policy initiatives. Provides opportunity and synthesis of nursing and non-nursing disciplinary knowledge.

NUR 491 Special Topics Course. This course has several sections, one of that is a Military Science section related to ROTC requirements. Military Science majors may take the course.

NUR 492 Elective Study. 1 to 5 credits. Prerequisite: Consent of department. Independent study projects planned to meet the learning objectives of the student.

NUR 496 Clinical Practicum. Semester course; 9 clinical laboratory hours. 3 credits. Pre or corequisite: Senior status. Facilitates transition into the professional role using a faculty-student-practicing nurse mentorship model. Provides opportunities for practice in a student-selected specialty area.

NUR 497 Specialty Clinical Practice. I, II. Semester course; variable; 1-3 credits. Prerequisites: RN licensure and enrollment in RN-BS track or graduate nursing program. Completion or enrollment in 200- and 300-level courses or permission of instructor is required. Advances professional nursing clinical competence using a faculty-student-preceptor mentorship model in a student selected area of specialty clinical nursing practice.

XVIII

PART

School of Pharmacy

Victor A. Yanchick

Professor and Dean (1996) BS 1962 and MS 1966 University of Iowa; PhD 1968 Purdue University

H. Thomas Karnes

Professor and Associate Dean for Research and Graduate Studies (1984) BS 1977 Illinois State University; MS 1980 and PhD 1984 University of Florida

Thomas P. Reinders

Associate Professor and Associate Dean for Admissions and Student Affairs (1974) BS 1970 and PharmD 1972 University of Cincinnati

William E. Smith

Associate Professor and Associate Dean for Administrative Affairs (1997) PharmD 1965 and MPH 1976 University of California; PhD 1994 Auburn University

The School of Pharmacy of the Medical College of Virginia of Virginia Commonwealth University, was officially established in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. A two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work for which a BS degree was awarded. The curriculum for the Bachelor of Science in Pharmacy degree was extended to five years in 1960. In 1975, the School of Pharmacy received authorization to offer advanced professional education leading to the Doctor of Pharmacy degree. The Doctor of Pharmacy program was initially offered to small numbers of highly qualified students who already had the BS in Pharmacy degree or who had completed four of the five years of the BS program. In 1995, a revised six-year Doctor of Pharmacy curriculum was adopted and offered as a replacement for the BS program which was then discontinued. The School of Pharmacy currently enrolls students in a four-year professional Doctor of Pharmacy curriculum following completion of at least two years of pre-professional studies taken elsewhere. In 1996 a part-time Doctor of Pharmacy Program was offered that permits current BS in Pharmacy degree holders to earn the Doctor of Pharmacy degree in a nontraditional format which requires students to come to campus infrequently.

Since 1971, all pharmacy students have participated in a clerkship program. Students spend their final year in a variety of practice settings under the supervision of highly qualified faculty preceptors.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Departments in the school direct work

leading to the MS and PhD degrees in the pharmaceutical sciences with emphasis in medicinal chemistry, pharmaceuticals, or pharmacy administration.

Philosophy

In developing the curriculum of the School of Pharmacy, the faculty recognizes that an educated person should be prepared to assume a responsible and rewarding role in society. The new paradigm of pharmaceutical care guides the school's curriculum committee and faculty in the design and implementation of the curriculum. Pharmaceutical care is the responsible provision of drug therapy by the pharmacist for the purpose of achieving definite outcomes that improve a patient's quality of life. In professional practice pharmaceutical care focuses on the pharmacist's attitudes, behaviors, commitment, concerns, ethics, functions, knowledge, responsibilities, and skills in the provision of drug therapy which achieves outcomes that yield improvement in a patient's quality of life. The educational program is designed to provide a sound, scientific, and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. It also includes courses in the arts and humanities in order to provide the student with a broad educational base which will permit participation in community life, not only as a professional, but also as an informed, concerned citizen. The professional curriculum is rigorous and highly demanding of the student's time; employment must not be allowed to interfere with the educational process. The faculty has adopted a document entitled "Expected Competencies of Doctor of Pharmacy Graduates" and has expanded these competencies into knowledge, skills, and attitudes that have been implemented in the curriculum.

Mission and Goals

The School of Pharmacy of Virginia Commonwealth University fully supports the mission and goals of the University and the MCV Campus. The school's mission statement, goals, and objectives are in concert with those of the University and the MCV Campus, and are reflective of the school's specific responsibilities.

The School of Pharmacy provides educational programs in the pharmaceutical sciences leading to the Doctor of Pharmacy, Master of Science, and Doctor of Philosophy degrees. The school is responsible for educating individuals who will provide quality pharmaceutical

care, as well as individuals who will provide quality scholarship, leadership, and service in the pharmacy and pharmaceutical sciences arenas at the local and national levels.

The mission of the school is to provide organized professional pharmacy curricula based on the principles of pharmaceutical care, graduate curricula in the pharmaceutical sciences, and post-graduate training programs. The professional curricula should provide a sound scientific and professional education for those individuals who will enter the practice of pharmacy directly so that they can assume responsibility for the outcomes of drug and related therapy in patients. The professional curricula should provide a broad educational base, including courses in the arts and humanities, so as to prepare the graduate to participate in community life as a professional and as an informed and concerned citizen. The graduate curricula should provide courses which explore the latest knowledge and theories in the pharmaceutical and related sciences, and extensive research experiences. The graduate curricula should prepare the graduate to innovate and lead in the pharmaceutical sciences at the national and international level.

The goals of the School of Pharmacy are to:

- I. Provide organized pharmacy curricula that will prepare individuals to deliver quality pharmaceutical care.
- II. Provide special courses and programs for those who seek additional education in pharmacy.
- III. Provide quality graduate education that prepares the graduate to innovate and lead in the pharmaceutical sciences at the national and international level.
- IV. Cultivate an awareness of professional demeanor and ethics in students and faculty.
- V. Encourage excellence in scholarship among students.
- VI. Develop and assure excellence in teaching.
- VII. Promote research and scholarly activity in the pharmaceutical sciences and related disciplines.
- VIII. Encourage the performance of service responsibilities to the University, school, department, profession and broader community.
- IX. Foster the concept and importance of life-long learning.
- X. Assume a proactive role in the development and evaluation of pharmacy practice.
- XI. Promote faculty development.
- XII. Recruit highly qualified students.
- XIII. Foster relations with alumni, the public, and health professionals.
- XIV. Manage the school's resources and programs in an effective manner.
- XV. Value and promote diversity among students, faculty, and staff; attend to the diverse needs of students.

Career Opportunities

Graduation from the School of Pharmacy affords the opportunity to pursue one of several career paths. The

most familiar role is as a provider of pharmaceutical care to ambulatory patients in a community setting. In this setting the pharmacist may be self-employed or may be an employee of an organization such as an independent pharmacy, a corporate chain of pharmacies, or a managed care pharmacy in a health maintenance organization.

Many pharmacists also practice in institutional settings such as hospitals or other health care institutions.

The pharmaceutical industry also employs pharmacists in several areas including manufacturing, quality control, research, sales, and as medical service representatives who call on physicians. Opportunities are also available in various government services, including the Public Health Service and the Veterans Affairs Administration, as well as in government-operated laboratories.

In most cases, those who aspire to engage in independent research or to teach seek graduate degrees in the pharmaceutical sciences or in specialty fields related to pharmacy.

Facilities

The School of Pharmacy is located in the Robert Blackwell Smith, Jr., Building at Twelfth and East Clay Streets. This building, which is named in honor of a distinguished former dean of pharmacy, president of the Medical College of Virginia of VCU, and provost of the MCV Campus of Virginia Commonwealth University, was completed in 1984 with the help of contributions from many alumni and friends of the School of Pharmacy.

Classes for students in pharmacy are also conducted in Sanger Hall, located between Eleventh and Twelfth Streets on East Marshall Street. This building houses several departments of the School of Medicine which provide basic sciences instruction for pharmacy students. Students receive clinical experience in the MCV Hospitals of Virginia Commonwealth University and other clinics. Other facilities available for teaching include area hospitals and pharmacies. The major library holdings are in the Tompkins-McCaw Library at 12th and East Clay Streets.

Accreditation

The Doctor of Pharmacy program is fully accredited by the American Council on Pharmaceutical Education. The school is a member of the American Association of Colleges of Pharmacy.

Programs

Professional

The school offers the doctor of pharmacy degree through two program pathways. Students who do not have a BS degree in pharmacy enroll in the first professional program which is completed in four years of full-time study at the school following completion of the two-year minimum pre-pharmacy requirements. Students holding the BS in Pharmacy degree who wish to upgrade their professional skills and degree enroll in a program

which can be completed through part-time study in a nontraditional program.

Graduate

The school offers programs of graduate study leading to the degrees of master of science (MS) and doctor of philosophy (PhD). Students may specialize in biopharmaceutics, medicinal chemistry, biopharmaceutical analysis, or pharmacy administration.

Interested students with graduate study potential should consult the appropriate department chair. Information on procedures and policies for graduate studies can be found in the *Graduate Bulletin*.

Licensing and Reciprocity

The Virginia Board of Pharmacy holds qualifying examinations for licensure three times a year. Applicants for the examination must present evidence that their first professional degree was granted by a school of pharmacy recognized by the board. This school is among those recognized. Applicants must also present evidence of completion of 1,000 hours of practical experience. Completion of the school's PharmD Program satisfies that 1,000-hour requirement.

Those students who intend to be licensed in Virginia should contact the Virginia Board of Pharmacy, 6606 West Broad Street, Suite 400, Richmond, VA 23230-1717.

Virginia has reciprocal licensing agreements with all states except California and Florida.

First Professional Doctor of Pharmacy Program Admission Requirements

Applicants for admission to the School of Pharmacy must attend an accredited college for at least two academic years (six quarters or four semesters) and complete the specified course requirements prior to admission.

Students planning to seek a degree in pharmacy upon high school graduation should plan their high school program to meet the requirements for admission in the college where they will take the prerequisite work for admission to pharmacy.

The minimal admission requirements are listed. (Meeting these requirements does not, however, guarantee acceptance into the VCU School of Pharmacy.)

- A. A statement affirming the applicant's good moral character signed by one or more pharmacists, physicians, or former teachers may be requested by the Admissions Committee.
- B. An official high school transcript and official transcripts from all colleges attended. Applications are considered by the Admissions Committee only after transcripts on file show completion of no less than two semesters or three quarters of college work. When offered, an acceptance is contingent upon satisfactory completion of specific work that may be in progress.

C. Academic Prerequisites. Applicants must offer the required credits in the following subject areas for a total of at least 68 semester-hours (102 quarter-hours).

	<i>Semester Hours</i>	<i>Quarter Hours</i>
Biology (lecture and laboratory)	8.0	12.0
General Chemistry (lecture and laboratory)	8.0	12.0
Organic Chemistry (lecture and laboratory)	8.0	12.0
Physics (lecture and laboratory)	8.0	12.0
English	6.0	9.0
Mathematics (at least 3 semester-hours or 4.5 quarter-hours must be calculus)	6.0	9.0
Ethics	3.0	4.5
Public Speaking	3.0	4.5
Electives	18.0	27.0
Total	68.0	102.0

Credits earned through Advanced Placement (AP) Tests of the College Board are not acceptable in meeting the total 68 semester-hours requirement. Such AP credits may excuse a student from taking a specific non-science course such as English, but the credits must be made up through additional electives.

All elective credits must be in liberal arts or behavioral sciences (natural sciences, physical education, or studio course credits are not accepted).

In unusual cases, students may be admitted subject to completion of course credit prior to graduation.

- D. Applicants must have earned a creditable average ("C" or better) overall, and in the courses specified, to meet minimum academic requirements for admission.
- E. Applicants for admission must submit a completed application form; this form requires that the names of four individuals be given who are qualified to assess the applicant's ability to complete the curriculum in pharmacy. The list of names must include at least two teachers (preferably in the sciences) and a health care provider. The fourth name should be a current or former employer.
- F. The dean and the committee on admissions may require a personal interview with the applicant.
- G. Applicants are required to take the Pharmacy College Admission Test before admission.
- H. Applicants whose first language is not English should submit scores from the Test of English as a Foreign Language (TOEFL), the Test of Spoken English (TSE) or other proof that the applicant's command of English is sufficient to allow successful completion of all of the requirements of the program.
- I. Students are admitted only at the start of the academic year. An applicant must complete one full year of the academic prerequisites before an application can be reviewed. The Admissions Committee

begins reviewing applications during October of the year preceding admission. It is to the applicant's advantage to apply during the fall of the year before expected enrollment in the School of Pharmacy. Applicants are accepted pending satisfactory completion of all prerequisite courses. Notification usually occurs in the early spring.

- J. Prior to enrolling, successful applicants must meet the immunization requirements set forth in the "General Information" section of this *Bulletin*. Prior to entering the third professional year, students must provide proof of immunity to hepatitis B.

The following criteria are considered in judging applicants:

- high school standing;
- SAT scores;
- college attended;
- academic workload carried;
- college overall grade-point average, chemistry, biology, and math proficiency;
- outside activities and achievements in high school and college;
- Pharmacy College Admission Test (PCAT) scores;
- written and oral communication skills;
- extent of exposure to pharmacy practice;
- extent of exposure to other health disciplines; and
- personal interview.

Time demands for this full-time program are rigorous. In general, the first three years require a Monday-Friday (8:00 a.m.-6:00 p.m.) commitment for lectures, conferences, laboratories and off-campus visits to area pharmacy practice sites. The fourth year is devoted to experiential learning at sites located throughout Virginia. Students enrolling in the four-year professional degree program must agree to the possibility of being assigned to sites beyond the Richmond-metropolitan area (e.g., eastern, northern, or western Virginia). Candidates must assess personal obligations prior to seeking application.

Virginia Commonwealth University does not discriminate against qualified applicants for admission who have disabilities, and seeks to provide reasonable accommodation to applicants and admitted students who identify themselves as having disabilities. Academic requirements essential to the program or to directly related licensing requirements will not be substituted. Upon acceptance into the program, students in need of accommodation may contact the MCV Campus Coordinator for Students with Disabilities at (804) 828-9782 to discuss their needs.

Further information and application materials may be obtained by writing to the Chair, Admissions Committee, School of Pharmacy, Virginia Commonwealth University, P.O. Box 980581, Richmond, VA 23298-0581. Applicants also may call a toll-free telephone number, 1-888-212-9287 for assistance.

First Professional Doctor of Pharmacy Program Curriculum

First Professional Year (Third College Year)

First Semester	<i>Hours</i>
ANA 505 Anatomy	3.0
PHC 501 Medicinal Chemistry I	2.0
BIC 523 Biochemistry I	2.0
PHA 503 Principles of Pharmacy	3.0
PHA 517 Pharmacy Skills Laboratory I	1.0
PHA 521 Pharmacy and Health Care Systems	3.0
PHA 525 Pharmacy Communications	3.0
PHA 557 Pharmacy Practicum I	1.0
	18.0

Second Semester

BIC 524 Biochemistry II	3.0
PIO 506 Physiology	4.0
MIC 501 Microbiology	4.5
PHA 506 Pharmacokinetics	3.0
PHA 518 Pharmacy Skills Laboratory II	0.5
PHA 542 Introduction to Pharmacotherapeutics	1.5
PHA 558 Pharmacy Practicum II	1.0
	17.5

Second Professional Year (Fourth College Year)

First Semester

PMC 603 Pharmacology I	4.0
PHC 603 Medicinal Chemistry II	3.5
PHA 605 Biopharmaceutics	2.5
PHA 617 Pharmacy Skills Laboratory III	1.0
PHA 627 Principles of Pharmacy Practice Management	3.0
PHA 643 Disease State Management I	3.0
PHA 657 Pharmacy Practicum III	1.0
	18.0

Second Semester

PMC 604 Pharmacology II	3.5
PHC 604 Medicinal Chemistry III	2.5
PHA 606 Applied Pharmacokinetics	2.5
PHA 618 Pharmacy Skills Laboratory IV	1.0
PHA 628 Advanced Pharmacy Practice Management	2.5
PHA 644 Disease State Management II	4.0
PHA 658 Pharmacy Practicum IV	1.0
	17.0

Third Professional Year (Fifth College Year)

First Semester

PHC 701 Pharmaceutical Analysis	3.0
PHA 705 Clinical Pharmacokinetics	2.5
PHA 717 Pharmacy Skills Laboratory V	0.5
PHA 743 Disease State Management III	4.0
PHA 745 Drug Literature Evaluation I	3.0
PHA 747 Physical Assessment	1.0
PHA 757 Pharmacy Practicum V	1.0
Elective	3.0
	18.0

Second Semester

PHA 718 Pharmacy Skills Laboratory VI	0.5
PHA 724 Pharmacy Law	3.0
PHA 739 Integrated Science and Practice	2.0
PHA 744 Disease State Management IV	4.0
PHA 746 Drug Literature Evaluation II	3.0
PHA 748 Self-Medication Awareness and Community Health	2.0

PHA 758 Pharmacy Practicum VI	1.0
Elective	2.0
	17.5
Fourth Professional Year (Sixth College Year)	
PHA 760 Acute Care Rotation	5.0
PHA 761 Hospital Practice Rotation	5.0
PHA 762 Long-Term Pharmaceutical Care Rotation	5.0
PHA 763 Primary Ambulatory Care Rotation	5.0
PHA 764 Community Pharmaceutical Care Rotation	5.0
PHA 765 Drug Information Analysis Rotation	5.0
PHA 766 Elective Rotation I	5.0
PHA 767 Elective Rotation II	5.0
	40.0

Approximately half of the students in the fourth professional year may be obliged to travel and reside some distance from Richmond to participate in pharmacy practice clerkships. No refund of payments for tuition, fees, or other expenses may be expected by the students since credit is granted for the time spent in this phase of the program. No stipends may be earned by the students in connection with any professional practice program for which the school grants credit.

Nontraditional Pathway Doctor of Pharmacy Program Admission Requirements

Applicants for this program must hold a BS in Pharmacy degree from a program that was accredited by the American Council on Pharmaceutical Education.

Applicants must have experience practicing as a licensed pharmacist.

Applicants for admission must submit a completed application form; this form requires that the names of four individuals be given who are qualified to assess the applicant's ability to complete the curriculum in pharmacy. The list of names must include at least two teachers (preferably in the sciences) and a health care provider. The fourth name should be a current or former employer.

The dean and the committee on admissions may require a personal interview with the applicant.

Prior to enrolling, successful applicants must meet the immunization requirements set forth in the "General Information" section of this *Bulletin*. Prior to beginning the practice rotations students must provide proof of immunity to hepatitis B.

Applicants must complete the specified statistics course or an acceptable substitute with a grade of "C" or better before they are accepted into the program.

Virginia Commonwealth University does not discriminate against qualified applicants for admission who have disabilities, and seeks to provide reasonable accommodation to applicants and admitted students who identify themselves as having disabilities. Academic requirements essential to the program or to directly related licensing requirements will not be substituted. Upon acceptance into the program, students in need of accommodation may contact the MCV Campus Coordinator for Students with Disabilities at (804) 828-9782 to discuss their needs.

Nontraditional Pathway Doctor of Pharmacy Program Curriculum

The courses in this program are offered in collaboration with the School of Pharmacy at the University of Kentucky. Students normally complete one course each semester using video tapes and reading materials. The schedule for the practice rotations is worked out individually with each student. The program must be completed within seven calendar years after acceptance into the program.

The following courses and practice rotations must be completed.

BIS 543 Statistical Methods I (prerequisite)	3.0
PHA 650 Drug Literature Evaluation	3.0
PHA 622 Clinical Pharmacokinetics	3.0
PHA 631 Advanced Pharmacy Practice Management	3.0
PHA 635 Applied Therapeutics I	6.0
PHA 636 Applied Therapeutics II	6.0
PHA 747 Physical Assessment	1.0
PHA 760 Acute Care Rotation	5.0
PHA 761 Hospital Practice Rotation	5.0
PHA 762 Long Term Care Rotation	5.0
PHA 763 Primary Ambulatory Care Rotation	5.0
PHA 764 Community Ambulatory Care Rotation	5.0
PHA 765 Drug Information Analysis Rotation	5.0
PHA 766 Elective Rotation I	5.0
PHA 767 Elective Rotation II	5.0

Academic Regulations

Matriculation in the School of Pharmacy implies a willingness on the part of students to comply with University rules and regulations and to conduct themselves in a manner befitting members of the profession the students seek to enter. The program of study and regulations regarding courses of study, student conduct, etc., are subject to modification without notice. All rules and regulations set forth in this *Bulletin*, as well as other statements issued by administrative officers of the University, apply until further notice.

Probation

Students may be placed on probation by either the Committee on Admissions or the Committee on Promotions. Probation is a status indicating that the student's scholarship is deficient and is expected to be improved to a level considered to be satisfactory by the faculty. Students who fail to meet probationary stipulations may expect to have their normal progress through school interrupted. They may be required to attend summer school, to repeat a year, or to withdraw. Students on probation are not eligible to be nominated for offices in the student government nor to represent the school in athletics or other extracurricular activities. Students on probation are expected to stop, or drastically curtail, any outside employment. Each student who is placed on probation receives a letter in which the details of that individual's probation are described.

Outside Work

In general, the faculty believes that students should give first priority to their school work. Students able to maintain academic standing are not restricted with respect to outside employment. Students in academic difficulty will be advised to cease or drastically curtail any outside employment.

Honor Code

All students are governed by the honor code and regulations of the student body organization. A detailed description of the Honor Council's rules of procedure is available upon request.

Faculty Advising Program

Each student in the School of Pharmacy is assigned a faculty adviser who can assist the student with academic and personal problems. The faculty adviser also serves as the student's mentor in the Pharmacy Practicum. Students usually remain with the same adviser throughout their attendance in the School of Pharmacy.

There is a faculty adviser to the Interfraternity Council as well as an adviser for each of the professional pharmacy fraternities.

Each of the student chapters of professional pharmacy organizations on campus operates with a faculty adviser.

Attendance Regulations

The following regulations apply specifically to students enrolled in the Doctor of Pharmacy program in all of their required and elective courses offered by departments in the School of Pharmacy and to required basic science courses offered by the School of Medicine. In courses in which these regulations apply, other students enrolled with pharmacy students also are subject to the regulations.

1. The faculty considers attendance at lectures to be an important component in the successful acquisition of knowledge and skills required of the Doctor of Pharmacy candidate. Students are strongly encouraged to attend lectures. An individual faculty member may require attendance in their lecture course and establish penalties for those who are absent without an excuse from the Dean's Office.
2. Attendance at laboratory and pre-laboratory classes is mandatory. Students must complete all laboratory assignments before a passing grade can be assigned. An excused absence from the Dean's Office is required for missing a laboratory or pre-laboratory class with the ability to make up the work with credit. Students without an approved absence are still required to make up the work but will not receive credit toward their course grade.
3. Students must take tests (e.g., quizzes, laboratory practicals, examinations) and complete all other assignments at the time designated by the course coordinator. Students must recognize that faculty may give unannounced tests at any time during a

course, consistent with documentation in a course syllabus. Students who miss any test in any course without an excused absence from the Dean's Office will receive a grade of zero for the specific test.

4. Attendance during each assigned clerkship period is mandatory. If a student is unable to attend to required clerkship responsibilities because of illness or other exceptional circumstances, the preceptor must be notified immediately. It is the responsibility of the student to also notify the program director concerning a plan to make up the absence, with the approval of the preceptor. Documentation of the absence and approval to make up the absent time will be maintained in the student's record.
5. Absences may be excused under certain conditions. Requests for excuses for unavoidable absences must be submitted to the Dean's Office, on an Absence Record form, within 24 hours of returning to the School of Pharmacy. The student must complete the Absence Record form with an explanation for the absence. Further explanation, if necessary, may be provided to the Associate Dean for Admissions and Student Services. It is a violation of the Honor Code to make false or misleading statements on the Absence Record form. In the event of an unexcused absence, the student is responsible for all work missed.
6. A guiding principle in determining whether or not an absence will be excused is that the absence is caused by circumstances beyond the student's control. The following are considered valid excuses for being absent from a class or clerkship.
 - a. **Illness, a medical emergency, a dental emergency.** The school normally accepts the student's judgement that the condition was serious enough to justify the absence from class; however, the school reserves the right to require a medical opinion, particularly if the period of absence is prolonged or is repetitive. The school will require a written medical opinion when a student is absent from taking a scheduled test or final examination. If the absence is a result of a medical emergency, the student will be required to sign a written release for the school to obtain documentation from their physician describing the exact nature of the illness or emergency. This record will be submitted to the associate dean for admissions and student services as a confidential document.
 - b. **Death of a relative or friend.** Students will be excused from class to attend funerals. Absence beyond the day of the funeral will be excused for periods of mourning required by a student's religious or cultural tradition, or when a student is too grief-stricken to return immediately to class.
 - c. **Mandatory court appearance.**
 - d. **Mandatory religious observances.** Students who anticipate absences from class because of religious obligations should

submit a list of their anticipated absences at the beginning of each semester to the Dean's Office. The student must also submit an absence form following each absence.

- e. **Failure of private, public or university transportation.** Students are expected to take reasonable precautions to assure that the transportation method used is fully functional (e.g., maintaining personal automobile, avoiding the last possible return airline flight to Richmond). Proof of transportation failure will be required.
 - f. **Attendance at professional meetings.** Students in good academic standing may receive an excused absence from class to attend a meeting of a professional pharmacy organization. The student must complete an Absence Record form in advance of attending a professional meeting. A policy statement containing eligibility criteria is distributed to all students.
7. Tardiness is a form of absence which may also be excused using the criteria mentioned above. Students arriving late for a test may be given the test without an excused absence but will not be allowed extra time beyond the scheduled termination of the test. Once a student has completed the test and left the room, late arriving students will not be permitted to take the test unless the absence is excused.
 8. Absences that are not reported within 24 hours after the student returns to School will be considered unexcused. It is not the responsibility of a faculty member to determine whether an absence is excused. This determination will be made by the Dean's Office.
 9. Students are expected to make every effort to keep abreast of their assignments during an absence. They should also be prepared to take tests upon their return to the School or at the discretion of the faculty member after considering the student's academic schedule. If, in the opinion of the Dean's Office, the nature of a student's absence made it impossible for that student to prepare for a test, the student will be granted an extension for taking the test.
 10. A faculty member should not give a make-up test before confirming that a student's absence has been excused. The faculty member usually provides an equivalent make-up test within a reasonable period of time. The type and format of the make-up exam will be determined by the faculty member. Within the framework of the Honor Code, it may be possible to administer the same examination if administered no more than 48 to 72 hours after the originally scheduled examination. Any make-up examination should be scheduled as soon as possible to avoid impeding the student's academic progress.

Promotion

Attending pharmacy school is not a right acquired simply by conforming with the entrance requirements and paying tuition and fees. For this reason the dean and the Committee on Promotions, composed of the student's instructors during the year, require that marginal or failing performance be improved or that the student withdraw from school. "D" grades are indicative of marginal performance. Careful consideration is given during the promotions process not only to the student's grades but also to his or her probity, industry, and scholastic ability.

These guidelines delineate the course of action to be taken by the Committee. Decisions regarding individual students will be made in accordance with these guidelines. Consideration will be given to pertinent information and extenuating circumstances for individual cases. The following statements present the prominent features of the promotions process.

1. Students are evaluated for progress at the end of each semester. A promotions committee, composed primarily of course coordinators for the year, assesses student progress for each of these periods. At the end of the fourth year the entire faculty will decide whether or not students have satisfied all requirements for graduation. Promotion decisions are based on achievement during the year under review and on the student's overall progress.
2. Students who have passed the work of an academic year with grades of "C" or better in all courses will ordinarily be advanced to the next higher class.
3. The Promotions Committee for the year involved thoroughly reviews the academic record of each student who fails to pass a course, receives a "D" grade, does not maintain a grade-point average of 2.0 or better for the year or semester in question, or is on probation. Following this review, the committee may recommend promotion on a probationary basis, require a repeat of all or a part of previous work, or terminate the student's enrollment.
4. Students who fail two or more courses during the program will be dismissed.
5. A student who earns "D" grades for six credits or more of class work in any year and/or a GPA of less than 2.0 in any year will be subject to academic probation, dismissal, or may be asked to repeat the year.
6. Students will be subject to academic probation, dismissal, or may be asked to repeat the year if they earn more than one "D" or "F" grade in any one of the following sequences of related courses: basic health sciences, medicinal chemistry, pharmacy and pharmaceuticals, pharmacotherapeutics, and pharmacy administration.
7. Students who fail to meet conditions of probation will be required to withdraw or repeat a year's work. Students will not be allowed to repeat more than one year of the curriculum.
8. A student must have passed all courses from the first three years of the curriculum to qualify for entry into the final year of the program.

Withdrawal

Students finding it necessary to withdraw from the School of Pharmacy must comply with the provisions for withdrawal in Part VI of this *Bulletin*.

The dean of the School of Pharmacy will not approve a request for withdrawal until the student has submitted a letter of resignation.

Students withdrawing without approval and failing to check out laboratory lockers will be assessed a \$5 checkout charge for each locker in addition to any charges resulting from the need to replenish the contents of the lockers.

Readmission

Students seeking readmission to the School of Pharmacy will be evaluated on their total academic record. Applicants for readmission to the first professional year will not be given priority over new applicants but must compete with them on an equal basis. Readmission in advanced standing will be considered on a space-available basis.

Graduation

Students are recommended and approved for the Doctor of Pharmacy degree by the faculty of the School of Pharmacy.

Candidates must meet the following requirements:

1. Be of good moral character.
2. Complete satisfactorily all the required work in a timely fashion, which will not normally exceed five years from the date of initial enrollment.
3. Pay all fees.
4. Complete the last year's work for the degree in residence in this school.
5. Be present at the commencement exercises unless excused by the dean in writing.
6. Complete satisfactorily the minimum number of required clerkship rotations and demonstrate the attainment of minimum competencies.

Honors and Awards

Rho Chi. This national honorary pharmaceutical society established Lambda Chapter at MCV in 1929. Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Election to membership in the society is based on high attainment in scholarship, character, personality, and leadership. Students become eligible for consideration during the second professional year of the pharmacy program.

Lambda Chapter annually awards certificates in recognition of outstanding scholarship to students who have completed the pre-pharmacy and first professional year pharmacy curriculum. Also, Lambda Chapter selects one member of the fourth professional year class who is recognized for excellence in scholarship, leadership, personality, and character. The name is inscribed on a plaque displayed in the School of Pharmacy.

Dean's Award. This award, named in honor of Dean Emeritus John S. Ruggiero, is sponsored by the Rosenthal Foundation and consists of a recognition certificate and an honorarium. The recipient is a graduating student selected by the Dean for outstanding achievement and unselfish devotion to his or her class, the school, the University, and the profession.

Virginia Pharmacists Association Research and Education Foundation Award. An award presented to the graduating student who has exhibited the ideals of professionalism and excellence in patient care throughout their academic pharmacy career.

APhA-ASP Professionalism Award. An award recognizing professionalism and excellence in patient care by a graduating student. The recipient must demonstrate exceptional service and commitment to the profession through involvement in professional organizations and other extracurricular learning opportunities.

Patient Care Award. An award recognizing a graduating student who best demonstrates the ability to apply clinical knowledge into practical patient care.

Excellence in Pharmacy Award. An award presented to a graduating student with high academic achievement, professional motivation and the intent to enter practice upon graduation.

Community Pharmacy Internship Award. An award recognizing a graduating student with the demonstrated qualities and abilities necessary to practice community pharmacy.

Clinical Research Award. An award recognizing the clinical research contributions of a graduating student.

Pharmacy Communications Award. An award presented to a graduating student with demonstrated effectiveness in communicating with patients.

Achievement Award. An award presented to a graduating student with demonstrated leadership qualities.

The Edward E. Willey Pharmacy Scholarship Award for Outstanding Scholarship and Leadership. This award, which memorializes a distinguished alumnus and dedicated public servant, is presented annually to a rising fourth professional year student who is determined by a committee of faculty to be outstanding in character, as judged by faculty and classmates; leadership ability, as demonstrated by participation in and leadership of student organizations; and academic performance, as demonstrated by the attainment of a 3.75 grade-point average during the first three years in pharmacy school. The award consists of payment of tuition, fees, and a stipend.

Linda Nixon Harvey Memorial Scholarship. This endowed award is presented annually to a rising fourth professional year student who has maintained high academic standards in college while exhibiting leadership, professional integrity, and outstanding personal qualities.

Jacobs Memorial Scholarship Fund. This endowed award is available annually to pharmacy students in financial need as recommended by the dean of the School of Pharmacy.

David D. Marshall Memorial Scholarship. This endowed award is presented annually to a married fourth professional year student who ranks academically in the top half of the class and who has a demonstrated financial need.

M. Bruce Rose Scholarship. This endowed award is presented annually to a student from the Virginia Pharmacists Association's Third District.

Glenn B. Updike, Sr. Scholarship Fund. This endowed fund is available, upon recommendation of the dean of the School of Pharmacy, to students who have financial need and scholastic ability. Special preference shall be given to applicants who are residents of Danville, Virginia.

Laura Butler Memorial Scholarship. This endowed award is presented annually to a pharmacy student in need of financial aid.

Samuel and Gilbert Rosenthal Foundation Scholarship. This endowed award is presented annually to pharmacy students in need of financial aid.

William S. Cooper Scholarship. Established in honor of the first African-American person to graduate from the School of Pharmacy, this endowed scholarship is awarded annually to qualified African-American students.

William W. and Patsy S. Gray Scholarship. Established from a bequest from Mr. W. W. Gray, this endowed scholarship is awarded to qualified pharmacy students.

Nick G. Nicholas Memorial Award. This endowed award was established "to benefit pharmacy students" and may be used for a variety of purposes including scholarships.

Carolyn Coleman (Stone) Student Fund. Established by friends and family of Carolyn Coleman, this endowed fund is to be used to assist with needs of pharmacy students, including tuition assistance and financial support of student projects.

Warren Weaver Endowment Fund. Established to honor this former dean of pharmacy, this fund is used to provide funds to enhance teaching and research programs and student activities.

W. Roy Smith Memorial Scholarship. This endowed scholarship is awarded annually to a senior pharmacy student demonstrating academic talent, strong leadership ability, and involvement in community activities.

Organizations

Virginia Academy of Students of Pharmacy. Students in the School of Pharmacy have an opportunity to become members of this organization which is affiliated with the Virginia Pharmacists Association and the American Pharmaceutical Association. The group meets regularly presenting programs of interest to the student body.

Student Chapter Virginia Society of Health-System Pharmacists. Pharmacy students who are interested in the practice of pharmacy in organized health care settings may become members.

Student National Pharmaceutical Association. This student subdivision of the National Pharmaceutical Association works to define the future role of minority health professionals in the community.

Student Association of Community Pharmacists. This student organization focuses on issues of interest to students who plan to pursue careers in community pharmacy. It is affiliated with the National Community Pharmacists Association.

Student Chapter of the Academy of Managed Care Pharmacists. This student organization serves the interests of students who plan to pursue a career in the managed care practice environment.

Professional Fraternities. Chapters of Phi Delta Chi, Kappa Psi, and Kappa Epsilon are active within the student body. These fraternities extend invitations, according to the rules of the Interfraternity Council, to pharmacy students to become members. Eligibility for consideration is based upon academic achievement as determined by the Interfraternity Council and the dean's office.

Financial Aid

See Part III of this *Bulletin*.

Courses of Instruction

Enrollment in courses included in the Doctor of Pharmacy curricula summarized on the preceding pages requires the approval of the dean of the School of Pharmacy unless the student has been admitted to the Doctor of Pharmacy program.

Department of Medicinal Chemistry

Donald J. Abraham

Professor and Department Chair (1988) BS 1958 Pennsylvania State University; MS 1959 Marshall University; PhD 1963 Purdue University

Desai, Umesh R. (1998) *Assistant Professor* BS 1983 University of Baroda; MS 1985 and PhD 1991 Indian Institute of Technology

Dukat, Malgorzata (1994) *Assistant Professor* MSC 1983 Technical University; PhD 1989 Academy of Medicine

Glennon, Richard A. (1975) *Professor* BS 1967 and MS 1969 Northeastern University; PhD 1973 State University of New York

Harvie, Lucy M. (1951) *Instructor* BS 1946 University of Richmond

Kellogg, Glen E. (1988) *Assistant Professor* BS 1979 University of New Mexico; PhD 1985 University of Arizona

Kier, Lemont B. (1977) *Professor* BS 1954 Ohio State University; PhD 1958 University of Minnesota

May, Everette Lee* (1977) *Professor of Medicinal Chemistry and Pharmacology and Toxicology* BA 1935 Bridgewater College; PhD 1939 University of Virginia

Reynolds, Kevin A. (1997) *Associate Professor* BS 1978 and PhD 1987 University of Southampton

Rife, Jason P. (1998) *Assistant Professor* BS 1987 University of Tampa; PhD 1994 University of South Florida

Scarsdale, J. Neel* (1988) *Assistant Professor of Medicinal Chemistry and Biochemistry and Molecular Biophysics* BS 1982 University of Arkansas; PhD 1989 Yale University

Soine, William H. (1978) *Associate Professor* BS 1970 University of Minnesota; MS 1975 and PhD 1978 University of Kansas

Westkaemper, Richard B. (1982) *Associate Professor* BS 1974 University of California; MA 1978 and PhD 1980 University of Kansas

Wright, Christine S.* (1980) *Professor of Medicinal Chemistry and Biochemistry and Molecular Biophysics* BS 1965 University of Indiana; PhD 1969 University of California, San Diego

Young, Richard (1990) *Assistant Professor* BS 1975 University of Cincinnati; MS 1977 and PhD 1981 Virginia Commonwealth University

Adjunct Faculty

Joshi

Affiliate Faculty

May
Wright

Rzeszotarski
Vant Riet

Visiting Lecturers

Blaney	Goodford
Lotter	Martin
Perutz	

Emeriti Faculty

Andrako, John *Professor Emeritus* BS 1947 and MS 1949 Rutgers University; PhD 1953 University of North Carolina
 Boots, Marvin R. *Associate Professor Emeritus* BS 1958 St. Louis College of Pharmacy; MS 1960 University of Wisconsin; PhD 1963 University of Kansas
 Richard, Alfred J. *Professor Emeritus* BS 1953 Lowell Technical Institute; MA 1955 and PhD 1958 Clark University
 Smith, J. *Professor Emeritus* BS 1942, MS 1949 and PhD 1946 University of Virginia
 Stubbins, James F. *Professor Emeritus* BS 1953 University of Nevada; MS 1958 Purdue University; PhD 1965 University of Minnesota
 Weaver, Warren E. *Professor Emeritus* BS 1942 and PhD 1947 University of Maryland
 Windridge, Graham C. *Associate Professor Emeritus* PharmD 1965 and PhD 1969 University of California, San Francisco

* Joint Appointment

Courses in Medicinal Chemistry

PHC 310 Medicinal Chemistry and Drug Design. Semester course; 3 lecture hours. 3 credits. Prerequisite: one year of organic chemistry. This course is designed to expose undergraduate chemistry, biology, and pre-medicine majors to the history, theory, and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs.

PHC 501 Medicinal Chemistry I. I. Semester course; 4 lecture hours per week for 8 weeks. 2 credits. This course integrates the chemical and physical properties of organic molecules with biological effects. Particular emphasis is placed on heterocyclic chemistry, mechanisms of drug decomposition, mechanisms of enzymatic reactions, and stereochemistry as they relate to drug action and biodisposition. Molecular physico-chemical phenomena are described which pertain to biological events.

PHC 526 Research Techniques in Medicinal Chemistry. Semester course; 0-2 lecture and 2-8 laboratory hours. 1-4 credits. The theory and application of classical, instrumental, and computer techniques used in medicinal chemistry research are presented.

PHC 532 Medicinal Chemistry for Nurse Anesthetists. Semester course; 4 lecture hours. 4 credits. A review of the principles of organic chemistry and bio-organic chemistry presented as a series of lectures covering the structure-activity relationships, metabolism, and mechanism of action of selected agents.

PHC 591 Special Topics in Medicinal Chemistry. Semester course; 1-3 credits. An elective course in which students may choose to participate in individual or group study in one or more areas of medicinal chemistry. The course can take the form of formal lectures, informal group discussions, literature research, and/or laboratory research. Students must have the permission of the individual instructor before registering for this course.

PHC 601 Advanced Medicinal Chemistry I. I. Semester course; 1 lecture hour. 1 credit. Introduces the general concepts important in medicinal chemistry, including drug dynamics, drug macromolecule interactions, drug design and quantitative structure-activity relationships.

PHC 603 Medicinal Chemistry II. I. Semester course; 3 lecture hours. 3 credits. A study of the general principles of drug action at the molecular-level. Emphasis is placed on physical, chemical, and biochemical properties of drug substances, the relationships between chemical structure and pharmacological activity, the molecular basis for drug-receptor interactions, and drug metabolism. A major goal is to prepare students so that they may more readily assimilate and apply new information about existing and future therapeutic agents.

PHC 604 Medicinal Chemistry III. II. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHC 603. A study of the general principles of drug action at the molecular-level. The philosophy and goals of PHC 603 are applied to the discussion of therapeutic classes of agents not covered in PHC 603.

PHC 610 Advanced Medicinal Chemistry II. II. Semester course; 2 lecture hours. 2 credits. Prerequisites: PHC 601 or the permission of the instructor. Introduces concepts for understanding the medicinal chemistry of the central nervous system.

PHC 620 Advanced Medicinal Chemistry III. II. Semester course; 2 lecture hours. 2 credits. Prerequisite: PHC 601 or the permission of the instructor. Reviews the concepts necessary for enzyme inhibitor design. Emphasizes the design of new agents to treat disease states by enzyme inhibition.

PHC 630 Theoretical Methods in Drug Design. Semester course; Lecture and laboratory hours. 2 credits. Prerequisites: PHC 601, PHC 610 or 620, or permission of instructor. A study of the theoretical methods of drug structure-activity analysis, including molecular orbital theory, topological indexes and physical property correlations. Computational chemistry problems will be emphasized in the laboratory.

PHC 641 Survey of Molecular Modeling Methods. Semester course; Lecture and laboratory hours. 1 credit. Introduces computational chemistry and molecular graphics with the current software used for drug design and small molecule/large molecule interactions. Computational chemistry problems will be emphasized in the laboratory.

PHC 642 Nucleoside, Nucleotide, Carbohydrate and Peptide Chemistry. Semester course; 1 lecture hour. 1 credit. Surveys nucleoside, nucleotide, carbohydrate and peptide chemistry with emphasis on their synthesis.

PHC 643 Regioselective Drug Metabolism. Semester course; 1 lecture hour. 1 credit. Surveys drug biotransformation reactions. Emphasizes the molecular aspects of Phase I and Phase II drug metabolism.

PHC 644 Asymmetric Synthesis. Semester course; 1 lecture hour. 1 credit. Reviews the major asymmetric chemical transformations, including mechanisms, scope and synthetic utility.

PHC 645 Introduction to Heterocyclic Chemistry. Semester course; 1 lecture hour. 1 credit. Introduces the chemistry of heterocyclic compounds. Emphasizes heterocyclic nomenclature and the reactions/reactivity of heterocyclic systems.

PHC 670 Advanced Molecular Modeling Theory and Practice. Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisite: PHC 641 or permission of instructor. Examines the principles and application of computational chemistry and molecular graphics to current problems in drug design. Lectures focus on the application of specific computational methods and techniques to solve problems in drug/molecular design. Workshop sessions provide hands-on experience using state-of-the-art hardware and software for molecular modeling.

PHC 690 Departmental Research Seminar. Semester course; 1 lecture hour. 1 credit. Reports presented by students, staff, and visiting lecturers, current problems and developments in pharmaceutical and medicinal chemistry are discussed.

PHC 691 Special Topics in Medicinal Chemistry. Semester course; 1-4 lecture hours. 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as a part of the research training.

PHC 697 Directed Research in Medicinal Chemistry. Semester course; 1-15 credits. Research leading to the MS or PhD degree.

PHC 701 Principles of Pharmaceutical Analysis. I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of the underlying principles and practical limitations of analytical procedures with emphasis on techniques most applicable to the quantization of substances in biological fluids. The laboratory work usually involves the testing and evaluation of over-the-counter analytical products currently

sold or used in pharmacies. Emphasis is also placed on the clinical applications and interpretations of measuring endogenous and exogenous chemicals present in biological fluids. This course includes material related to both statistics and ethics.

Department of Pharmacy and Pharmaceutics

William H. Barr

Professor, Eminent Scholar and Department Chair (1972) BS 1960, PharmD 1961 and PhD 1966 University of California, San Francisco

- Ballentine, Rollin L. (1987) *Associate Professor* BS 1971 University of Cincinnati; PharmD 1973 University of Michigan
- Brasfield, Kenneth H., Jr. (1988) *Assistant Professor* BS 1976 and PharmD 1978 Mercer University
- Brophy, Donald (1996) *Assistant Professor* BS 1992 and PharmD 1994 North Dakota State University
- Byron, Peter R. (1988) *Professor* BS 1970 and PhD 1973 University of Manchester
- Carroll, Norman V. (1989) *Professor* BS 1976, MS 1979 and PhD 1982 University of North Carolina, Chapel Hill
- Coaker, Jean S. (1992) *Research Assistant* BS 1977 James Madison University
- Comstock, Thomas J. (1982) *Associate Professor* BS 1977 Ohio State University; PharmD 1979 University of Utah
- Crandall, Sonia J. S. (1998) *Associate Professor* BS 1974 Western Illinois University; MEd 1980 University of Illinois; PhD 1989 University of Oklahoma
- Crouch, Michael A. (1996) *Assistant Professor* BS 1992 University of North Carolina, Chapel Hill; PharmD 1995 Medical University of South Carolina
- Delafuente, Jeffrey C. (1998) *Professor* BS 1973 and MS 1976 University of Florida
- Exum, Barbara J. (1982) *Assistant Professor* BS 1982 and PharmD 1986 Virginia Commonwealth University
- Ford, George D.* (1969) *Professor of Physiology* BS 1961 West Virginia University; MS 1964 University of Iowa; PhD 1967 West Virginia University
- Garnett, William R. (1976) *Professor* BS 1969 Medical College of Virginia of Virginia Commonwealth University; PharmD 1973 Philadelphia College of Pharmacy and Science
- Gonzalez, Edgar R. (1991) *Associate Professor* BS 1981 Philadelphia College of Pharmacy and Science; PharmD 1983 University of Utah
- Goode, Jean-Venable R. (1989) *Assistant Professor* BS 1986 Virginia Polytechnic Institute and State University; BS 1989 and PharmD 1994 Virginia Commonwealth University
- Gorham, Adrian (1996) *Assistant Professor* PharmD 1985 Florida A & M University
- Gray, Elizabeth S. (1994) *Assistant Professor* BS 1987 George Mason University; BS 1990 and PhD 1992 Medical College of Virginia of Virginia Commonwealth University
- Griffith, Frank A. (1998) *Director of Development* BA 1960 University of Pittsburg
- Hansen, Lea Ann (1985) *Associate Professor* BS 1979 University of North Nebraska; PharmD 1983 University of Nebraska
- Hindle, Michael (1997) *Research Associate Professor* BS 1989 and PhD 1992 University of Bradford, UK
- Holdford, David A. (1995) *Assistant Professor* BS 1980 University of Illinois; MS 1991 Ohio State University; PhD 1995 University of South Carolina
- James, John R. (1988) *Research Assistant* BS 1987 University of Oregon; MS 1991 and PhD 1992 Virginia Commonwealth University
- James, Vivien E. (1996) *Assistant Professor* BS 1989 University of South Carolina; PharmD 1992 Medical University of South Carolina
- Karnes, H. Thomas (1984) *Professor and Associate Dean*, School of Pharmacy AAS 1974 Illinois Central College; BS 1977 Illinois State University; MS 1980 and PhD 1984 University of Florida
- Kennedy, Daniel T. (1996) *Assistant Professor* BS 1991 and PharmD 1995 University of Minnesota
- Kirkpatrick, Mary Ann (1983) *Assistant Professor* BS 1968 University of North Carolina, Chapel Hill; MS 1991 and PhD 1997 Virginia Commonwealth University
- Kirkwood, Cynthia K. (1985) *Assistant Professor* BS 1982 and PharmD 1985 Virginia Commonwealth University
- Kirkwood, Craig F. (1984) *Associate Professor* BS 1980 and PharmD 1983 State University of New York, Buffalo
- Kreig, Richard J., Jr.* (1975) *Professor of Anatomy* BS 1967 University of San Francisco; MS 1969 and PhD 1975 University of California, Los Angeles
- March, Clark L. (1987) *Research Assistant Professor* BS 1972 Georgia Institute of Technology; MS 1983 Virginia Commonwealth University
- McKenney, James M. (1972) *Professor and Chair, Division of Clinical Pharmacy* BS 1965 Hampden-Sydney College; BS 1968 Virginia Commonwealth University; PharmD 1972 Wayne State University
- Miederhoff, Patrick A. (1985) *Associate Professor* BS 1963 St. Louis College of Pharmacy; MS 1971 University of Louisville; PharmD 1974 University of Kentucky; PhD 1985 University of New Orleans
- Morgan, Harvey B. (1997) *Director of Alumni Affairs* BS 1952 Hampden-Sydney College; BS 1955 Virginia Commonwealth University
- O'Neal, Charles H.* (1968) *Associate Professor of Microbiology and Immunology* BS 1957 Georgia Institute of Technology; PhD 1963 Emory University
- Palmer, Shirley M. (1997) *Assistant Professor* BS 1990 Virginia Commonwealth University; PharmD 1992 Philadelphia College of Pharmacy and Science
- Patrick, Graham A.* (1973) *Professor* BS 1969 University of North Carolina; PhD 1973 Tunghai University
- Peart, Joanne (1996) *Visiting Assistant Professor* BS 1991 and PhD 1996 University of Bath
- Polk, Ronald E. (1976) *Professor* BPh 1971 Washington State University; PharmD 1974 University of Michigan
- Poyner, Wesley J. (1980) *Associate Professor and Director of Information Technology* BS 1972, BS 1974 and PhD 1980 University of Texas, Austin
- Pugh, Carol B. (1992) *Associate Professor* BS 1977 College of William & Mary; BS 1982 and PharmD 1984 Medical College of Virginia of Virginia Commonwealth University
- Pyles, Michael A. (1983) *Assistant Professor* BA 1977 and MA 1979 University of Florida; PhD 1990 Virginia Commonwealth University
- Reinders, Thomas P. (1974) *Associate Professor and Associate Dean, School of Pharmacy* BS 1970 and PharmD 1972 University of Cincinnati
- Rock, William L. (1982) *Assistant Professor* BS 1975 and PharmD 1979 Virginia Commonwealth University
- Rodgers, Philip T. (1996) *Assistant Professor* BS 1992 and PharmD 1995 University of North Carolina, Chapel Hill
- Ruffin, David M. (1995) *Assistant Professor* PharmD 1994 University of South Carolina
- Sarkar, Mohamadi A. (1998) *Associate Professor* BS 1981 and MS 1985 University of Bombay; PhD 1990 Virginia Commonwealth University
- Shelton, Keith R.* (1970) *Professor of Biochemistry and Molecular Biophysics* BA 1963 University of Virginia; PhD 1968 University of Illinois
- Slattum, Patricia W. (1996) *Assistant Professor* BS 1985, PharmD 1992 and PhD 1992 Virginia Commonwealth University
- Small, Ralph E. (1975) *Professor of BS* 1973 University of Toronto; PharmD 1975 Duquesne University
- Small, Sharon Stevens (1986) *Assistant Professor and Director of Continuing Studies and External Affairs* BS 1976 and PharmD 1990 University of Kentucky
- Smith, William E. (1997) *Associate Professor of Pharmacy and Pharmaceutics and Associate Dean, School of Pharmacy* PharmD 1965 and MPH 1976 University of California; PhD 1994 Auburn University
- Tendolkar, Amol V. (1991) *Assistant Professor* BS 1981 University of Bombay; PhD 1992 Virginia Commonwealth University
- Tush, Gretchen (1996) *Assistant Professor* PharmD 1994 University of Arizona
- Venitz, Jurgen (1988) *Associate Professor* MD 1980 and PhD 1986 Universitat Des Saarlandes, Germany
- Wheeler, Mark T. (1997) *Assistant Professor* BS 1989 and PhD 1994 Virginia Commonwealth University
- Wu-Pong, Susanna (1993) *Assistant Professor* BS 1986 University of Texas, Austin; PhD 1992 University of California, San Francisco
- Yanchick, Victor A. (1996) *Professor of Pharmacy and Dean, School of Pharmacy* BS 1962 and MS 1966 University of Iowa; PhD 1968 Purdue University

Yunker, Nancy S. (1985) *Assistant Professor* BS 1983 and PharmD 1984
Purdue University

Affiliate Faculty

Bauwens
Susla

Rogers
Wertheimer

Clinical Faculty

Adams
Allen, J.
Aust
Ballentine, L.
Berringer
Blevins
Blouch
Boyer
Brasfield
Brink
Brower
Buddie
Burns
Carlson
Carrig
Case
Cimmino
Clasen
Cole
Cundiff
Dugger
Dunn
Edloe
Emswiller
Ferraro
Gallahan
Gilley
Goode, D.
Gutshall
Harris
Hasty
Hendrick
Holder
Holzbach
Humphries
Jennings
Johnson, J. S.
Jones, C.
Jussen
Kellum
Kittinger
Konnor
Lessing
Limon
Lipps
Malone
Mason
McGory
Milkovich
Miller, W.
Mitchell
Munden
Murphy
Nguyen
Orr
Patterson
Peery
Peters
Pickard
Pigg
Poremba
Raney
Rhodes
Rodgers, J.
Rodgers, S. A.
Rogers, S. A.
Rotz
Schraa

Allen, C.
Atkins
Bahlman
Barrett
Berryman
Blanchard
Bowerman
Bradley
Briggs
Broderick
Brusig
Buchanan
Callis
Carney
Carson
Chatelain
Clary
Cohee
Cramer
Davis
Duke
Dye
Elliott
Erb
Flint
Gendron
Goldwater
Greiner
Hamilton
Harrow
Hawley
Herbert
Hollis
Hughes, J.
Israel, M.
Johnson, A.
Johnston
Jones, T.
Kale
Kenny
Kolb
Kwong
Liberto
Linas
Lockridge
Martin
Mather
Michael
Miller, R.
Mink
Mulkey
Muniz
Necary
Ogden
Parker
Pedigo
Perkins
Petrilla
Pierce
Pigue
Posner
Rayfield
Robinette
Rodgers, M.
Rodgers, S.
Rosner
Schalow
Schreiber

Scott, K.
Shannonhouse
Simmons
Smith
Smith, D.
Smith, H.
Snead
Stanley
Stoneburner
Tarasidis
Thompson, D.
Tiffany
Tullio
Varalli
Volles
Wampler
White
Wilnot-Pater
Wyant

Seyfried
Sim
Sisca
Smith, C.
Smith, E.
Smoot
Snider
Stewart
Szalwinski
Taylor
Thompson, J.
Tisdell
Van Diepen
Vincent
Walpole
Weber
Wiatt
Wright
Zigmont

Emeriti Faculty

Fiske, Russell H. *Associate Professor Emeritus* BS 1939 University of Michigan
Hilliard, Norman L. *Assistant Professor Emeritus* BS 1953 and MED 1970 Virginia Commonwealth University
Ruggiero, John S. *Professor Emeritus* BS 1952 St. John's University; MS 1954 Duquesne University; PhD 1958 University of Connecticut
Smith, Harold L. *Associate Professor* BS 1956 and PhD 1962 Medical College of Virginia
Stepka, William *Professor Emeritus* BA 1946 University of Rochester; PhD 1951 University of California, Berkeley
White, Eugene V. *Associate Professor Emeritus* BS 1950 Medical College of Virginia; JD 1962 University of Richmond
Wood, John H. *Professor Emeritus* BS 1946 University of Manitoba; MS 1947 and PhD 1950 Ohio State University

* Joint Appointment

Courses in Pharmacy and Pharmaceutics

PHA 503 Principles of Pharmacy. I. Semester course; 3 lecture hours. 3 credits. A study of the chemical and physico-chemical principles fundamental to the development and use of medication dosage forms. Topics discussed include pharmaceutical calculations, prescription orders, weights and measures, theory of solutions, official waters, solution stabilizing agents and preservatives, sterile products, and ophthalmic products. In addition, there are lectures on descriptive and inferential statistics.

PHA 506 Pharmacokinetics. II. Semester course; 2.5 lecture and 1 conference hour. 3 credits. This course describes drug and dosage form stability and linear pharmacokinetics, which includes discussion of compartmental modeling, physiological concepts of pharmacokinetics, and clearance concepts. The course includes material related to statistics.

PHA 517 Pharmacy Skills Laboratory I. I. Semester course; 3 laboratory hours. 1 credit. This competency-based course includes an introduction to informatics, statistics, medical terminology, medication distribution systems, dispensing prescriptions, patient counseling and compounding solution drug products. Graded Honors or Pass/Fail.

PHA 518 Pharmacy Skills Laboratory II. II (first half). Semester course; 3 laboratory hours. 0.5 credits. This competency-based course includes the preparation of sterile products and a continuation of medication distribution systems. Graded Honors or Pass/Fail.

PHA 521 Pharmacy and the US Health Care System. I. Semester course; 3 credits. This course introduces students to the American health care system and acquaints them with the features of that system that directly influences the practice of pharmacy and the provision of pharmaceutical care. The course pays particular attention to pharmacy as a profession, the practice of pharmacy, and the delivery of pharmaceutical care in a complex environment by considering the structure, function, and associated policy considerations of the health care delivery system. The course also provides a general overview of the health

care delivery system. The course also provides a general overview and an intensive analysis of interrelationships among health care consumers, providers, organizational arrangements, and regulatory and reimbursement mechanisms. The course includes material related to statistics and ethics.

PHA 525 Communication in Pharmacy. I. Semester course; 2 lecture and 2 conference hours per week. 3 credits. A study of the theory and techniques of communication and counseling techniques related to pharmacy practice. Supervised practice in developing basic communication skills.

PHA 541 Pharmaceutical Ethics. Semester course; 2 lecture hours. 2 credits. A study of the current practice and philosophy of pharmacy. Graded Pass/Fail.

PHA 542 Introduction to Pharmacotherapeutics. II. Semester course; 1.5 lecture hours. 1.5 credits. This course provides an introduction to the basic principles of the therapeutic use of medications to manage disease states. Disease prevention, laboratory test interpretation, nutritional issues, immunology, and genetics are covered.

PHA 557, 558 Pharmacy Practicum I, II. I, II. Semester courses; 12 conference hours, 27 experiential hours per semester. 1 credit. These courses are the first of a six-semester sequence. Students will have direct contact with patients and pharmacy practice sites to allow understanding of the effect of illness and medication on patients and the impact of pharmaceutical care services. Graded Honors or Pass/Fail.

PHA 591 Special Topics in Pharmacy. Semester course; 1-4 credits. An elective course in which students may participate in research projects or undertake special studies, through tutorial arrangements and/or library assignments, in the several areas of the pharmaceutical sciences.

PHA 601 Advanced Pharmaceutical Product Development. 3 lecture and 4-10 laboratory hours. 5-8 credits. An advanced study of the pharmaceutical, physicochemical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms.

PHA 605 Biopharmaceutics. I. Semester course; 2.5 lecture hours. 2.5 credits. The course describes the biopharmaceutics of pharmaceutical dosage forms including dispersed systems, semi-solids, solids and novel drug delivery systems. Formulation, manufacturing, control and relevant pharmacist-patient interactions are discussed for each case. This course includes material related to statistics.

PHA 606 Applied Pharmacokinetics. II. Semester course; 2 lecture and 1 conference hour per week. 2.5 credits. This course extends the concepts of pharmacokinetics as applied to dosage regimen design, pharmacokinetic variability, drug interactions, and statistical strategies for individualization of drug therapy.

PHA 611 Advanced Physical Pharmacy. Semester course; 3 lecture and 0-4 laboratory hours. 3-5 credits. Detailed application of physicochemical principles to areas of pharmaceutical interest, including colloids, rheology, phase rule, complexation, kinetics, drug stability, and micromeritics.

PHA 612 Advanced Physical Pharmacy. Semester course; 3 lecture and 0-4 laboratory hours. 3-5 credits. A continuation of PHA 611.

PHA 617 Pharmacy Skills Laboratory III. I. Semester course; 3 laboratory hours. 1 credit. This competency-based course includes the preparation of parenteral nutrition products, solid and semi-solid dosage forms. The course also includes the evaluation of transmitted prescriptions. Graded Honors or Pass/Fail.

PHA 618 Pharmacy Skills Laboratory IV. II. Semester course; 3 laboratory hours. 1 credit. This competency-based course introduces students to selected clinical applications in pharmacy practice. Graded Honors or Pass/Fail.

PHA 621 Advanced Biopharmaceutics and Drug Disposition. Semester course; 3 lecture hours. 3 credits. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination, and

pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

PHA 622 Clinical Pharmacokinetics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction.

PHA 624 Pharmacokinetics. Semester course; 3 lecture hours. 3 credits. An advanced treatment of the kinetics of drug absorption, distribution, and elimination utilizing mathematical models, analog, and digital computers for analysis of linear and nonlinear biologic systems.

PHA 625 Pharmaceutical Analysis. Semester course; 1 lecture and 1 laboratory hour. 2 credits. Theory and practice of selected analytical techniques for the quantitative analysis of drugs in body fluids and other matrices. Emphasis is on method validation, and immunoassay methodologies. Laboratory sessions will provide "hands on" experience with modern methods of drug analysis.

PHA 627 Principles of Pharmacy Practice Management. I. Semester course; 3 lecture hours. 3 credits. This course describes social, behavioral, and financial theories pertinent to the management of pharmacy practices in community, hospital and other settings.

PHA 628 Advanced Pharmacy Practice Management. II. Semester course; 2 lecture and 2 conference hours per week. 2.5 credits. A continuation of PHA 627 with an emphasis on marketing and pharmacoeconomic concepts applied to the practice of pharmacy. The course includes material related to ethics.

PHA 631 Advanced Hospital Pharmacy Management I. Semester course; 3 lecture hours. 3 credits. Classical, social, and systems views of management are introduced with emphasis on the uses of implicit control. The sociology of professions and the nature of professional work are explored; the management of the professional's work is discussed in detail. Design and operation of integrated drug information, drug distribution, and drug use control systems is explored.

PHA 632 Advanced Hospital Pharmacy Management II. Semester course; 3 lecture hours. 3 credits. The planning and development of a total program in institutional drug use control is stressed with emphasis on modern human and fiscal resource management theories and applications. Current management problems unique to institutional pharmacy practice are stressed.

PHA 635 Advanced Pharmacotherapeutics and Adverse Drug Reactions I. Semester course; 3 lecture and 6 laboratory hours. 6 credits. The rational therapeutic choices of drugs with respect to pathophysiological considerations of diseases are emphasized. Clinical application of biopharmaceutics, pharmacokinetics, therapeutics, drug interactions, adverse drug reactions, laboratory findings, and other factors affecting drug efficacy in the context of the total care of the patient is stressed. Detection, clinical evaluation, and management of adverse drug reactions is also emphasized. Students receive advanced instruction in therapeutics and pathophysiology and learn to apply drug knowledge to problem solving using selected patient cases.

PHA 636 Advanced Pharmacotherapeutics and Adverse Drug Reactions II. Semester course; 3 lecture and 6 laboratory hours. 6 credits. A continuation of PHA 635.

PHA 637 Case Management Conference. Semester course; 2 lecture hours. 2 credits. Students present and analyze patient cases and selected therapeutic topics from their advanced practice rotations. Emphasis is placed on drug therapy in the context of the total management of the patient with multiple medical problems.

PHA 638 Therapeutic Case Challenge. Semester course; 2 lecture hours. 2 credits. Students discuss and debate subtleties and controversies in the drug therapy of patients encountered in their practice rotations.

PHA 643 Disease State Management I. I. Semester course; 2.5 lecture and 0.5 conference hours. 3 credits. The pathophysiology, clinical

presentation, clinical course, prevention, and pharmacotherapy of disease states are presented. The detection of drug-related problems in the provision of pharmaceutical care using problems or patient cases is introduced. Problem-solving and communication skills are enhanced in small group conferences.

PHA 644 Disease State Management II. II. Semester course; 3.5 lecture and 0.5 conference hours. 4 credits. The pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states are presented. Clinical pharmacology, applied clinical pharmacokinetics, techniques for assessing drug-related problems, monitoring and optimizing pharmacotherapy using subjective and objective patient data are emphasized. Large group discussions are introduced. Problem-solving and communication skills are enhanced in small group conferences.

PHA 650 Drug Literature Evaluation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study, at the advanced-level, of the techniques used to retrieve and evaluate clinical drug literature. Research methods and research design are taught to better prepare the student to evaluate published research.

PHA 657, 658 Pharmacy Practicum III, IV. I, II. Semester courses; 12 conference hours, 27 experiential hours per semester. 1 credit. This course focuses on the skills needed to solve problems and deliver pharmaceutical care. Skills taught in other courses and laboratory sessions will be reinforced and refined in the experience component of this course. Graded Honors or Pass/Fail.

PHA 690 Pharmacy Research Seminar. Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmacy. Research Seminar.

PHA 691 Special Topics in Pharmacy. Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

PHA 692 Clerkship Training. Semester course; 1-4 credits. This course is designed to train PharmD students to teach pharmacy students in clinical practice sites.

PHA 693-696 Advanced Practice. Semester course; 3-15 credits. A series of elective and required planned experiences to permit PharmD students to utilize their knowledge of the pharmaceutical sciences in a variety of practice settings. Each course consists of one or more month-long rotations, each carrying three semester-hours of credit. Rotations within a course offer different experiences under the same or a different instructor. Enrollment in any of these courses requires the permission of the director of the PharmD program. Rotations are offered in the following areas: inpatient medicine, primary ambulatory care, specialty ambulatory care, drug information, infectious disease, mental health, department program management, management support programs, clinical inpatient program management, clinical outpatient program management, pediatrics, pharmacotherapeutic consultation, pharmacokinetic consultation, nutritional support.

PHA 697 Directed Research in Pharmacy. Semester course; 1-15 credits. Research leading to the MS, PharmD, or PhD degree.

PHA 705 Clinical Pharmacokinetics. I. Semester course; 2 lecture and 1 conference hour per week. 2.5 credits. This course builds on material from PHA 606. It reviews concepts and applications of pharmacodynamic principles related to the kinetics of drug response and discusses the clinical application of dose individualization for selected drugs. The course includes material related to statistics.

PHA 717, 718 Pharmacy Skills Laboratory V, VI. I, II. Semester courses; 1.5 laboratory hours. 0.5, 0.5 credits. This competency-based course continues to challenge students in selected clinical applications in pharmacy practice. Graded Honors or Pass/Fail.

PHA 724 Pharmacy Law. II. Semester course; 3 lecture hours. 3 credits. A study of federal and state laws, including statutes, regulations and cases, affecting the practice of pharmacy and the distribution of drugs. This course includes material on ethics.

PHA 739 Integrated Science and Practice. II. Semester course; 4 conference hours. 2 credits. Clinicians should apply basic sciences to solve therapeutic problems in patients. This course will use the case study method to integrate the basic sciences into clinical problem-solving by discussing specific disease management in depth. Students will have to apply the appropriate basic sciences to solve patient problems.

PHA 743 Disease State Management III. I. Semester course; 4 lecture and 0.5 conference hours. 4.5 credits. Patient cases serve as the basis for active student learning of the pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states. Collection of patient data, assessment of drug-related problems, development of recommendations, and establishment of monitoring parameters are emphasized. Clinical application of pharmacology, biopharmaceutics, pharmacokinetics, therapeutics, drug interactions, adverse drug reactions, laboratory findings, and other factors affecting drug efficacy in the context of disease state management are also stressed. Student participation in large and small group discussions is an essential component of this course.

PHA 744 Disease State Management IV. II. Semester course; 3.5 lecture and 0.5 conference hours. 3.5 credits. Patient cases serve as the basis for active student learning of the pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states. The rational therapeutic choice of drugs with respect to multiple disease states is emphasized. Collection of patient data, assessment of drug-related problems, development of recommendations, and establishment of monitoring parameters are emphasized. Clinical application of pharmacology, biopharmaceutics, pharmacokinetics, therapeutics, drug interactions, adverse drug reactions, laboratory findings, and other factors affecting drug efficacy in the context of disease state management are also stressed. Student participation in large and small group discussions is an essential component of this course.

PHA 745 Drug Literature Evaluation I. I. Semester course; 2.5 lecture and 1.5 laboratory hours. 3 credits. This is the first course in the drug literature evaluation sequence, which contains material related to biostatistics. Lecture topics include research design, concepts and principles of clinical trials, evaluation of case reports and primary literature, appropriate use of statistics, and inferential statistics (parametric and nonparametric). Laboratory exercises include efficient use of drug information resources, critique of pharmaceutical advertising, and development of professional skills.

PHA 746 Drug Literature Evaluation II. II. Semester course; 2.5 lecture and 1.5 laboratory hours. 3 credits. This is the second course in the drug literature evaluation sequence, which contains materials related to biostatistics. Lecture topics include evaluation of clinical studies in specialty areas (e.g., infectious diseases, oncology, cardiology, psychiatry) and particular study designs (e.g., quality-of-life, pharmacoeconomic, pharmacoepidemiologic, and meta-analysis), as well as confidence intervals and survival curves. Laboratory exercises include critique of various studies preparation of formal consults and critical evaluations, and conduct of statistical analyses.

PHA 747 Physical Assessment. I. Semester course; 1 lecture hour per week. 1 credit. A study of basic physical assessment through lectures, audiovisual aids, readings, and hands-on practice. Emphasis is placed on patient interviewing techniques, physical examination skills, and the application of these skills to evaluating drug therapy and achieving desired therapeutic goals. Graded Honors or Pass/Fail.

PHA 748 Self-Medication Awareness and Community Health. II. Semester course; 1.5 lecture and 1 conference hours per week. 2 credits. This course describes and utilizes skills for assessing the necessity of using nonprescription therapy for the medical problems encountered. Problem solving, hands-on workshops to learn about home-monitoring, case presentation, and didactic lectures will all be used to conduct the course. The course includes material related to everyday prevention of disease and statistical evaluation of all patient data collected.

PHA 757, 758 Pharmacy Practicum V, VI. I, II. Semester courses; 12 conference hours, 27 experiential hours per semester. 1 credit. Students will learn to integrate the patient care skills learned in PHA 657-8 into the pharmaceutical care services provided to assigned patients in hospital and ambulatory settings. Students identify drug-related problems,

develop and execute patient care plans to address these problems, monitor and interpret the results of these plans and document services in health records. Graded Honors or Pass/Fail.

PHA 760 Acute Care Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in the delivery of pharmaceutical care to hospitalized patients with an ongoing clinical pharmacy program. Students may participate in adult medicine, family practice or specialty medicine. Students will participate in the following types of activities: rounding, obtaining patient histories, identifying problems requiring therapeutic interventions, solving problems, consulting with physicians, monitoring patient outcomes and providing educational sessions for the professional staff. These services are expected to be integrated with the continuum of hospital pharmacy services.

PHA 761 Hospital Practice Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in the hospital pharmacy department's delivery of pharmacy services including drug preparation, dispensing, drug distribution, administration and quality assurance. Students will participate in dosage form development, IV admixtures, unit dose dispensing, documentation, quality assurance and related services.

PHA 762 Long-Term Care Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in the delivery of care and services to patients residing in resident halls, adult homes and/or nursing homes. Student activities will include drug preparation and distribution as well as the consultant activities that include drug monitoring and review of patient care.

PHA 763 Primary Ambulatory Care Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in the delivery of pharmaceutical care in a primary care, multidisciplinary practice in which there is an ongoing clinical pharmacy program. These sites may include community pharmacies, hospital clinics, physician group practices, and managed care facilities. Students will be involved in obtaining patient histories, evaluating drug therapies, assessing patient's response to therapy, identifying drug related problems, developing pharmacy care plans, monitoring the patient's therapeutic outcome, consulting with physician and non-physician providers and providing patient education. If this site offers dispensing services, the student will be involved with drug delivery to the patient.

PHA 764 Community Ambulatory Care Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will participate in all facets of pharmacy practice in the community pharmacy setting. Students will be involved in dispensing, compounding, telephone consultation, patient counseling and nonprescription drug recommendations. Students will also be involved in patient assessment, monitoring intervention and follow-up care designed to improve the outcomes of drug therapy.

PHA 765 Drug Information Analysis Rotation. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will be involved in activities that involve analysis and provision of drug and medication use information for the improvement of patient outcomes. This experience will be available in a variety of settings including hospital drug information centers, hospital pharmacies providing the same information without a formal drug information center designation and pharmacy benefit management firms which are involved in drug utilization review, prescriber education and advice, and development of disease management protocols.

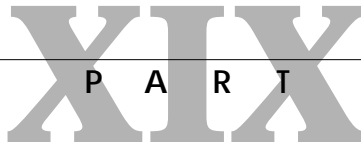
PHA 766 Elective Rotation I. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will be participate in the delivery of pharmaceutical care to patients. There will be a number of rotation sites providing this experience.

PHA 767 Elective Rotation II. I, II, S. Semester course; daily for 5 weeks. 5 credits. In this course, students will be able to participate in a variety of pharmacy practice settings.

Basic Health Sciences

Basic health sciences courses are included in the pharmacy curriculum. See Part XVI, School of Medicine, for details on the following courses and faculty.

Anatomy (ANA 505)
Biochemistry and Molecular Biophysics (BIC 523,524)
Microbiology and Immunology (MIC 501)
Pharmacology and Toxicology (PMC 603, 604)
Physiology (PIO 506)



School of Social Work

Frank R. Baskind

Dean and Professor of Social Work (1992) AB 1967 Fordham University; MSW 1971 and PhD 1978 University of Connecticut

Ann M. Nichols-Casebolt

Associate Dean, Director of the PhD Program and Professor of Social Work (1993) BA 1971, MSSW 1978 and PhD 1984 University of Wisconsin

Marcia P. Harrigan

Director of the Master of Social Work Program and Associate Professor of Social Work (1979) BA Muskingum College; MSW 1974 and PhD 1989 Virginia Commonwealth University

Jane W. Reeves

Director of Baccalaureate Social Work Program and Assistant Professor of Social Work (1978) BA Denison University; MS 1958 Simmons College

Beckett, Joyce O. (1985) *Professor* BA 1967 Temple University; MSS 1969 and PhD 1977 Bryn Mawr College

Bentley, Kia J. (1989) *Associate Professor* BA 1978 Auburn University; MSSW 1979 University of Tennessee; PhD 1987 Florida State University

Biggerstaff, Marilyn A. (1977) *Professor* BA Baker University; MSW University of Kansas; DSW 1976 University of Southern California

Bryant, Shirley A. (1995) *Associate Professor* BA 1965 Hanover College; MSW 1969 Fordham University; DSW 1985 Howard University

Cox, A. Leavelle (1994) *Assistant Professor* BS 1961 Virginia State University; MSW 1973 Temple University; PhD 1994 Smith College

Cramer, Elizabeth P. (1995) *Assistant Professor* BA 1983 State University of New York, Binghamton; MSW 1984 University of Michigan; PhD 1995 University of South Carolina

Dattalo, Patrick V. (1985) *Associate Professor* BS 1973 Brooklyn College; MSW 1980 and DPA 1993 Virginia Commonwealth University

Davis, King E. (1984) *Professor* BSW 1964 and MSW 1966 California State University; PhD 1971 Brandeis University

Dungee-Anderson, Elizabeth D. (1985) *Associate Professor* BA 1967 Virginia Union University; MSW 1976 Virginia Commonwealth University; DSW 1985 Howard University

Fabelo, Humberto E. (1995) *Assistant Professor* BS 1981 Florida State University; MSW 1989 and PhD 1995 Florida International University

Farmer, Rosemary L. (1989) *Assistant Professor* BA 1966 State University of New York, Harpur College; MSW 1972 Hunter College; PhD 1993 Virginia Commonwealth University

Fauri, David P. (1983) *Professor* AB and MPA University of Michigan; MSW University of Illinois; PhD 1972 Syracuse University

Gilson, Stephen F. (1993) *Assistant Professor* BA 1973 California State University; MSW 1980 University of Denver; PhD 1991 University of Nebraska

Green, Robert G. (1975) *Professor* BS and MSW Virginia Commonwealth University; PhD 1980 Virginia Polytechnic Institute and State University

Hutchison, Elizabeth D. (1987) *Associate Professor* BA 1967 Maryville College; MSW 1969 Washington University; PhD 1988 State University of New York, Albany

Koerin, Beverly B. (1979) *Associate Professor* BS 1969 and MSW 1974 Virginia Commonwealth University; PhD 1982 University of Virginia

Kovacs, Pamela J. (1996) *Assistant Professor* BSW 1973 University of Vermont; MSW 1979 Boston College; PhD 1996 Florida International University

Mason, Joseph A. (1997) *Assistant Professor* BA 1980 Haverford College; MSS and MLSP 1983 Bryn Mawr College

Miller, Jaclyn (1978) *Associate Professor and Director, Field Instruction* BA University of California; MSSW and PhD 1982 University of Texas, Austin

Naleppa, Matthias J. (1996) *Assistant Professor* BSW 1988 and MSW 1991 Catholic University of America; PhD 1995 University of New York, Albany

Netting, F. Ellen (1993) *Professor* BA 1971 Duke University; MSSW 1975 University of Tennessee, Knoxville; PhD 1982 University of Chicago

Newton-Guest, Shirley R. (1995) *Assistant Professor* BA 1974 Granbling State University; MSW 1977 and DSW 1994 Howard University

Peay, Robert W. (1978) *Assistant Professor* BS Virginia Union University; MSW 1974 Virginia Commonwealth University

Rodwell, Mary K. (1987) *Associate Professor* BA 1967 Immaculate College; MSW 1978 and PhD 1988 University of Kansas

Rosenblum, Amy C. (1977) *Assistant Professor and Assistant Director, Field Instruction* BA Barnard College, Columbia University; MSW 1960 Columbia University, New York School of Social Work

Rosenblum, Phillip L. (1992) *Assistant Professor* BA and MSW University of Pittsburgh

Saunders, David N. (1972) *Associate Professor* BA Dartmouth College; MSW University of Michigan; PhD 1975 Bryn Mawr College

Schneider, Robert L. (1974) *Professor* BA 1965 Catholic University of America; MSW 1972 and DSW 1975 Tulane University

Schwartz, Martin S. (1975) *Professor* BA University of Wisconsin; MS Boston University; EdD 1968 Columbia University

Schwartz, Sanford (1987) *Associate Professor* BA 1970, MSW 1972 and PhD 1982 Washington University

Seaberg, James R. (1978) *Professor* BA and MSW University of Nebraska; PhD 1974 University of Wisconsin, Madison

Sheridan, Michael J. (1984) *Associate Professor* BS 1971, MSW 1979 and PhD 1988 Virginia Commonwealth University

Stoesz, David P. (1995) *Professor* BS 1969 Springfield College; MSW 1976 Ohio State University; DSW 1980 University of Maryland, Baltimore

Walsh, Joseph F. (1993) *Assistant Professor* BA, MSW and PhD 1992 Ohio State University

Emeriti Faculty

Barber, Alice *Associate Professor Emerita* BA Southeastern Louisiana College; MSW Tulane University

Beverly, David P. *Associate Professor Emeritus* BA University of Richmond; MSSW Virginia Commonwealth University; DSW Catholic University of America

Carpenter, Edward M. *Professor Emeritus* BA San Francisco State College; MSW and DSW University of California, Berkeley

Dahlke, H. Otto *Professor Emeritus* BA and MA University of Illinois; PhD University of Wisconsin

Falck, Hans S. *Professor Emeritus* BA Case Western Reserve University; MA Syracuse University; MSW University of Buffalo; PhD Syracuse University

Jones, Jean Boyd *Associate Professor Emerita* AB Oberlin College; MSSA Case Western Reserve University

Lane, Lionel C. *Professor Emeritus* BA Long Island University; MS College of the City of New York; MSSW Columbia University; DSW University of Pennsylvania

Roth, Edna T. *Professor Emerita* BA and MSSA Case Western Reserve University; DSW Smith College
 Russell, Dojelo C. *Professor Emeritus* BA University of Arkansas; MSW Tulane University; DSW Catholic University of America
 Schrieberg, Charlotte S. *Associate Professor Emeritus* BS Westhampton College; MSSW Virginia Commonwealth University
 Scotch, Charles Bernard *Professor Emeritus* BA Boston University; MSW University of Pittsburgh; PhD Brandeis University
 Segal, Florence Z. *Associate Professor Emeritus* BA Queens College; MA University of Chicago
 Tropp, Emanuel *Professor Emeritus* BSS College of the City of New York; MSSW Columbia University
 Wells, Mabel G. *Associate Professor Emerita* BA and MSW Howard University; PhD Bryn Mawr College

The oldest of its kind in the South, VCU's School of Social Work was established in 1917 as the Richmond School of Social Economy. Later renamed the School of Social Work and Public Health, it became the first unit of Richmond Professional Institute. The school was created initially in response to community manpower needs in working with World War I veterans and their social and health problems. Subsequent development of the school has expanded activity into all areas of human service.

With the creation of VCU in 1968, the School of Social Work became a unit of the University's Academic Campus. The Raleigh Building at 1001 West Franklin Street houses faculty offices, a student lounge, and conference rooms.

Social workers are committed to the enhancement of social functioning and the promotion of social justice. To achieve these goals, social workers provide services to individuals, families, groups, communities, and organizations. They also plan and administer the delivery of social services and advocate positive social and institutional change. Social work education provides the knowledge, skills, and value base for these professional activities.

Social work education at VCU is highly individualized and is characterized by a close relationship between faculty and student. The faculty help students learn the form and method of social work practice and students are encouraged to discover their own unique style of helping others. The school's educational programs are designed to prepare students for practice in many different kinds of social agencies. A combination of classroom courses and concurrent fieldwork experiences facilitates integration of knowledge, attitudes, and skills necessary for professional practice. The integrated class and fieldwork curriculum offers students the opportunity to acquire a substantial base in social work practice, patterns of human behavior and development, organization, and operation of social welfare programs and policies, the methods of scientific inquiry in social work, and the needs of special populations.

Accreditation

VCU's Bachelor of Social Work (BSW) Program is accredited by the Commission on Accreditation of the Council on Social Work Education – the accrediting body for all schools of social work at both the baccalaureate and master's levels. Copies of the *Accreditation Standards and Curriculum Policy Statement* are available in the Office of the Dean.

Baccalaureate Social Work Program

The School of Social Work offers a Bachelor of Social Work degree to prepare graduates for beginning professional practice with individuals, families, groups, communities and organizations.

The objectives of the BSW Program are:

1. to provide an integrated curriculum that allows students to acquire the knowledge, skills, ethics, and values that are essential for beginning generalist social work practice;
2. to offer an educational experience that facilitates the critical analysis of current social work knowledge and practice;
3. to provide classroom and field instruction experiences designed to promote understanding of diversity and oppression; and
4. to provide a learning environment that supports lifelong learning and prepares students for the possibility of graduate education.

A copy of the expected student learning objectives can be found in the *BSW Student Handbook* and the *Field Manual*.

Degree Requirements

The BSW degree requires completion of 121 credits, including 42 credits in the major. The curriculum of the Bachelor of Social Work Program is specifically designed to prepare students for beginning level generalist social work practice. This practice model requires a broad base of knowledge about individuals, families, groups, communities, and organizations, and an appreciation of cultural diversity. General education courses provide an essential foundation for the upper-level professional curriculum and are required for admission to junior and senior social work courses.

Freshman and Sophomore Year Curricula

General Education Requirements

1. Communicating	Credits
A. Written Communication	6
ENG 101 and 200	
(with a minimum grade of "C" in each)	
B. Oral Communication	3
SLW 230 (with a minimum grade of "B")	
2. Ethics	
Most social work courses have specific units on professional ethics. Students also have the option of taking PHI 212 or PHI 213 to meet the critical thinking requirement.	
3. Quantity and Form	
A. Mathematics	3
Demonstrated proficiency on the Math Placement Test or completion of one course in college-level mathematics	
B. Statistics	3
Completion of one course in statistics	
4. Science and Technology	
BIO 101 and Laboratory	4

Completion of one additional course chosen from BIO 102, BIO 103 or PSY 401	3
5. Critical Thinking PHI 212, 213,221 or 222	3
6. Interdependence SOC 101,ANT 103,and 12 credits chosen from Economics, History, and/or Political Science with a maximum of 6 credits in any one of these content areas.	18
7. Visual and Performing Arts One course in the visual or performing arts selected from the approved list of participatory art courses for non-majors.	minimum of 2
8. Humanities and Social Sciences Two courses in Humanities chosen from the approved list and PSY 101, PSY 304,PSY 407.	10

Electives	6	3
PSY 407 Psychology of the Abnormal	3	-
	15	15
Fourth Year		
SLW 422 Social Welfare Legislation and Services	3	-
SLW 431 Person in Society III	3	-
SLW 441 Social Work Practice I	3	-
SLW 494 Senior Field Instruction I	3	-
SLW 442 Social Work Practice II	-	3
SLW 495 Senior Field Instruction II	-	3
Electives	3	9
	15	15

Admission Requirements

For admission to the professional preparation program offered in the junior and senior years, students must complete a minimum of 54 credits, including the following courses: ENG 101-200, PSY 101 and 304, SOC 101,ANT 103, MAT, PHI 212, 213, 221 or 222,Statistics, BIO 101 and Laboratory, and SLW 201 and SLW 230. Students must achieve a minimum grade of “C” in ENG 101-200 and “B” in SLW 201 and SLW 230, and **must have a minimum grade-point average of 2.5 in all course work completed before entry into upper-level classes.**

Students eligible to register for upper-level social work courses need to make an appointment with their adviser to review and complete the Application for Admission.

Although the BSW Program can be completed on a part-time basis, it cannot be completed exclusively in the evening because of field practicum requirements and the scheduling of some classes.

Transfer students may be granted provisional admission contingent on their meeting the above requirements and completion of 15 credits at VCU.

Junior and Senior Year Curricula

All students must successfully complete the following courses. Students must earn a “C” or better in attempted 300-level social work courses before entering 400-level courses. Students must have a “C” or better in all required social work courses before graduation.

Transfer of credits from other colleges or universities or from other programs at VCU is determined on an individual basis. Credit is not given for life experiences.

A minimum of 121 credits is required for the BSW degree.

	<i>Credits</i>	
	<i>1st Sem.</i>	<i>2nd Sem.</i>
Third Year		
SLW 311 Social Work and Oppressed Groups	-	3
SLW 313 Person in Society I	3	-
SLW 330 Person in Society II	-	3
SLW 332 Social Work Practice Fundamentals	-	3
SLW 390 Foundations of Social Work Research	3	-
SLW 393 Junior Field Instruction	-	3

Application for the field practicum must be made through the School of Social Work Field Department and must be received by the eighth week of the spring or fall semester. Field placements require students to spend 14 hours a week in an agency and cannot be completed on nights and weekends. Students may request a placement with some evening and/or weekend hours. These placements are scarce and the granting of such a request depends on the availability of appropriate agencies and resources.

Minor in Social Welfare

A minor in social welfare is available to non-social work majors. This minor consists of 18 credits, including SLW 201 Introduction to Social Work and SLW 422 Social Welfare Legislation and Services. The remaining 12 credits can be fulfilled by completing SLW 230, 311, 313, 330, 390, or 431. Practice and Field courses are restricted to majors.

Honors in Social Work

Baccalaureate Social Work majors may earn honors in social work. Eligible students may apply in the second semester of their junior year. Students must have completed at least 12 credits in social work at VCU and have earned a 3.3 overall grade-point average (GPA) and a 3.6 GPA in social work courses.

To graduate with honors in social work, students must have earned 3 credits of approved honors modules with a grade of “B” or better. Students who meet these requirements and all other graduation requirements of the University will have honors in social work noted on their transcripts.

Student Association

The Baccalaureate Social Work Student Association (BSWSA), an organization of students in the BSW Program, was established to facilitate communication among students and between the student body and the school faculty and staff. This organization plays a vital role in the educational process. Through student representation on committees within the school, BSWSA members participate in decision-making processes. In addition, the association enables students to conduct a variety of social and professional activities throughout the year.

Graduate Social Work Programs

The school offers a PhD in social work and a two-year full-time or four-year structured part-time, professional program in social work leading to the Master of Social Work (MSW) degree. For a detailed description of the MSW and PhD programs see the *Graduate Bulletin*. A copy can be obtained by writing School of Graduate Studies, Virginia Commonwealth University, P.O. Box 843051, 901 West Franklin Street, Richmond, VA 23284-3051.

Advanced-Standing Program

Open to a selected group of students, this program leads to an MSW degree upon completion of at least 39 credits which must be completed in a summer session followed by an academic year.

For admission to this program, each applicant must hold a bachelor's degree from an undergraduate social work program accredited by the Commission on Accreditation of the Council on Social Work Education. The BSW degree must have been conferred no more than 5 years prior to application for Advanced Standing. The Advanced-Standing Program begins in early June, continues through the summer, and culminates in graduation the following May. Successful candidates for this program must earn a minimum GPA of 3.2 for the last 60 hours of academic work and go through a structured interview on campus. Deadline for application is December 1.

Courses in Social Work

SLW 201 Introduction to Social Work. Semester course; 3 lecture hours. 3 credits. Systematic overview of the social work profession. Begins the process of professional socialization, both through class content and required service experience. Knowledge of the nature of social work, the fields of social work practice, target populations, overview of social work methods.

SLW 230 Communication in the Helping Process. Semester course; 3 lecture hours. 3 credits. The study of the knowledge, skills and values of effective human communication and interpersonal relations. Includes observation, collection and description of data, verbal and non-verbal communication, and the relevance of the above to social work practice. Integrates issues of human diversity in all course content. Emphasizes the demonstration and practice of communication through structured exercises.

SLW 311 Social Work and Oppressed Groups. Semester course; 3 lecture hours. 3 credits. Examines forces leading to individual prejudice and institutional oppression. Focuses on impact of oppression. Provides students with an understanding of diversity and a general knowledge of social work strategies to alleviate oppression and to empower the oppressed.

SLW 313 Person in Society I. One semester course; 3 lecture hours. 3 credits. Prerequisite: ANT 103, BIO 109-110, PSY 304 and SOC 101. First of a two-semester sequence on Human Behavior and the Social Environment. Uses theoretical concepts and research findings from the behavioral sciences as background for understanding and assessing the functioning of individuals and families in their social environment. Facilitates integration of theory and research with assessment skills associated with basic social work practice. Emphasizes the social systems approach for analyzing the impact of various social problems on individual and family dynamics.

SLW 330 Person in Society II. Semester course; 3 lecture hours. 3 credits. Prerequisite: SLW 313. Second of three courses on Human Behavior in the Social Environment. Uses theoretical concepts from the behavioral sciences to understand the family and small groups as social institutions and social groups as context for human behavior over the life cycle. Designed to provide a theoretical foundation for practice with families and small groups.

SLW 332 Social Work Practice: Fundamentals. Semester course; 3 lecture hours. 3 credits. Prerequisites: SLW 201, SLW 230 and SLW 313. Corequisite: SLW 393. Open only to social work majors with junior status. First of three semester practice sequence. Introduces students to basic concepts and skills of beginning-level professional generalist social work practice. Emphasizes application of concepts to the concurrent fieldwork experience.

SLW 390 Foundations of Social Work Research. Semester course; 3 lecture hours. 3 credits. Prerequisite: STA 210 or CSE 241. Designed to provide an understanding and appreciation of a scientific, analytic approach to building knowledge for practice and for evaluating multi-level service delivery. Provides an overview of the research process, including problem formulation, sampling, design, measurement, data collection, data analysis, and dissemination of findings. Presents ethical standards of scientific inquiry with special attention to research with vulnerable and oppressed populations.

SLW 393 Junior Field Instruction. Semester course; 3 credits. Prerequisite: SLW 313. Corequisite: SLW 332. Open only to majors with junior status. 14 hours per week in a community agency under the supervision of an agency-based field instructor. Intended to facilitate student's understanding of agency-structure and community context, ability to engage in professional relationships, to assess strengths, define problems, set goals and utilize beginning-level practice skills with individuals, families, groups organizations and communities. Promotes identification as a professional social worker.

SLW 422 Social Welfare Legislation and Services. Semester course; 3 lecture hours. 3 credits. Analyzes social welfare policy as related to social values, social problems, and social structures. Examines frameworks for policy analysis and for evaluation of programmatic outcomes of policy, with application to contemporary social service and income maintenance policies and delivery systems. Considers the economic, political, and ideological factors and processes that affect social welfare legislation, financing, and implementation.

SLW 431 Person in Society III. Semester course; 3 lecture hours. 3 credits. Prerequisite: SLW 313. Required of all undergraduate Social Work majors. Third of three courses on Human Behavior in the Social Environment. Builds on the theoretical concepts from the behavioral sciences discussed in SLW 230 and 313. Focus on understanding organizations and how their purposes, auspices, structure, processes, and environment affect the delivery of social services to diverse groups. The community context of social services, including that of the consumer, is emphasized from an open systems theoretical perspective. Students will be expected to integrate course content with their field experience or other agency with which they are familiar.

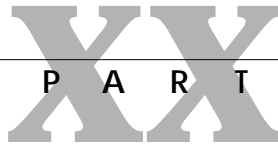
SLW 441 Social Work Practice I. Semester course; 3 lecture hours. 3 credits. Pre or Corequisite: SLW 390. Prerequisites: SLW 332, 393. Second of a three-semester practice sequence. Review of interviewing and problem solving for generalist social work practice with diverse populations. Emphasis on agency structure and function, skills of engagement and problem definition, assessment, planning for intervention and evaluation. Use of material from concurrent fieldwork practice to facilitate integration of learning.

SLW 442 Social Work Practice II. 3 lecture hours. 3 credits. Prerequisites: SLW 441, 494. Third of a three-semester practice sequence. Emphasizes planning and implementing change with diverse populations, professional ethics, professional development, termination and evaluation of generalist social work practice. Use of case material from concurrent fieldwork practice to facilitate integration of learning.

SLW 492 Independent Study. Semester course; 1, 2, 3 lecture hours. 1, 2, 3 credits. Prerequisites: Junior or senior standing and permission of instructor. Under supervision of a faculty adviser,

whose consent is required to register, study of a topic of concern to the student. Each student must present his/her findings in writing or pass an oral examination.

SLW 494-495 Senior Field Instruction I and II. Continuous course; 3-3 credits. Prerequisites: SLW 332, 393. Corequisites: SLW 441, 442. Open only to majors with senior status. Fourteen (14) hours per week in a community agency under the supervision of an agency based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.



Division of University Outreach

Sue Ann Messmer

Vice Provost and Associate Professor, Department of Art History
(1973) BA 1970 Duke University; MA 1972 Indiana University

The Division of University Outreach is responsible for coordinating the University's community outreach, international activities, and enrollment services. Enrollment services include undergraduate admissions, records and registration, financial aid, and student accounts.

Office of Community Programs

Catherine W. Howard

Director, Office of Community Programs and Associate Professor of Psychology (1988) BA 1979 Davidson College; MS 1983 University of Maryland; PhD 1988 Pennsylvania State University

The Office of Community Programs coordinates the outreach activities of the University to the community. This office administers VCU's off-campus credit-based instruction, the off-campus Master of Interdisciplinary Studies (MIS) Program, the on-campus and off-campus Bachelor of General Studies (BGS) Program, summer studies, noncredit continuing education, conference and workshop planning, and the Cooperative Education Program. The Office of Community Programs also coordinates many community outreach programs, including the Community Service Associates Program, Service Learning and numerous programs designed for youth.

Summer Studies

Sue F. Munro

(1983) BA 1965 Wheaton College; MA 1966 University of Tennessee

The variety and flexibility of VCU's educational program is especially evident during the summer. In 1997, over 8,500 summer students studied at VCU. These students came to work on a degree, to learn new skills, to explore new fields of study, to keep their professional skills up-to-date, and to seek intellectual enrichment.

Summer classes are planned around various sessions of three, four and one-half, five, six, and eight weeks and even some two-week workshops. During the summer, classes begin and end almost every week. Students who plan to devote their summer to study can put together an approved combination of classes from various sessions and earn up to 15 credits in the 13 weeks that make up the summer session.

Announcements of VCU offerings are available on request from the Office of Community Programs, Virginia Commonwealth University, 827 West Franklin Street, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-1831.

Off-Campus Programs

Edward Howard

(1996) BS 1995 Virginia Commonwealth University

The University provides numerous opportunities for part-time and full-time off-campus study both in the nearby community and throughout the state. Off-campus credit classes feature the same course work available on campus, and off-campus courses are fully degree-applicable within the normal standards of the schools within the University.

Many of VCU's off-campus courses are offered in response to an expression of need from various groups in the state. VCU offers, for example, courses in education for public school teachers at local high schools, and serves employees of local business organizations with on-site credit instruction. Other classes are offered on a continuing basis and serve specific educational needs in different geographical areas across the state.

In addition, selected VCU courses and workshops/seminars can be delivered via technology to an off-campus audience.

Questions regarding off-campus studies should be directed to Edward Howard at (804) 828-8819 or by e-mail to eahoward@vcu.edu.

Bachelor of General Studies

Dorothy E. Fillmore

(1986) BA 1977 St. Andrews Presbyterian College; MA 1984 Virginia Commonwealth University

This University degree program is designed for adult students who have clearly articulated goals that cannot be met by existing University programs. It offers flexible schedules and highly individualized curricula leading to a bachelor of general studies (BGS).

Through individualized advising, this program helps adults define their educational goals and design their interdisciplinary curricula by drawing on a variety of course offerings.

BGS degree programs are available both on and off campus. To earn a BGS degree, students must complete at least 120 credits with at least a 2.0 cumulative

GPA. Forty-five of those credits must be upper-division credits.

Program Requirements

General Education 35-40 hours

1. **Communicating.** 12-15 hours. 6 hours Composition and Rhetoric (e.g., ENG 101–200 by course or placement with a minimum grade of C in each course or demonstrated competence). Two Writing Intensive courses, one of which preferably is in the Focus area. 3 hours in Speech or Communications (e.g., SPE 121 or 321; SLW 230; PSY 323, 340, 341; REC 195) or transfer credit which includes a course emphasizing oral communication.
2. **Ethics.** 3 hours. Completion of an ethics course (e.g., PHI 211, 212, 213, MAC 290, RST 340, SOC 445, or POS 341) or transfer credit which includes a course emphasizing ethics.
3. **Quantity and Form.** 6 hours. Must include College Algebra or its equivalent (e.g., MAT 131) plus an additional course from MAT, Logic, CSC, or STA).
4. **Science and Technology.** 3-4 hours. Completion of a course in science which includes a laboratory experience.
5. **Visual and Performing Arts.** 2-3 hours. Completion of a course which includes a participatory component or explores the historical, cultural, aesthetic and creative development of the arts.
6. **Humanities and Social Sciences and Interdependence.** 9 hours. Completion of 3 courses to be distributed as follows: 3 hours in Humanities (e.g., Literature, RST, HIS, PHI); 3 hours in American, European or Non-Western Culture); 3 hours in Social Sciences (e.g., PSY, SOC, SSC, ECO, POS, AAS, ANT, GEO, WST, SLW). One of the 3 courses must have an international or global emphasis.

Focus Area. The individually designed interdisciplinary focus area requires a minimum of 36 semester hours of credit, including at least 24 semester hours of upper-level credit.

Electives. Maximum of 52 credits.

Other Requirements. For degree completion at least 25 percent of credit semester hours must be earned through instruction at VCU.

The last 30 hours of credit must be taken at VCU or 15 may be taken at VCU and 15 from other approved institutions in the area when there is no equivalent VCU course. At least 24 hours must be taken after acceptance into the program; 12 of these must be in the focus area. Twenty-one of the junior/senior-level hours must be from VCU. No more than 60 semester credits may be from a two-year college, and BGS students may have no more than 30 hours of business courses, including transfer courses.

To enter the program, students must: attend one orientation session (call to schedule an appointment); have a goal that cannot be met by another degree program at VCU; have a minimum of 30 semester hours of college credit; have a minimum grade-point average of 2.0.

Students admitted to the BGS program have a variety of credit options, including CLEP examinations, credit for formal military training and credits for certain professional certifications when they do not duplicate college course work.

For additional information contact the Office of Community Programs, Virginia Commonwealth University, 827 West Franklin Street, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420.

Special Students

Dorothy E. Fillmore

The Office of Community Programs serves as the entry point for special (or non degree-seeking) students who wish assistance in accessing the University. Such students should call (804) 828-8420 for further information or to schedule an advising appointment.

Cooperative Education

Cheryl M. Melton

(1982) BS 1971 and MEd 1987 Virginia Commonwealth University

Cooperative Education blends traditional academics with paid work assignments in industry, business, government, and nonprofit organizations. This combination enhances the student's academic knowledge, personal development, and preparation for a professional career and provides broad exposure to one's academic major. Students may work part time while attending classes or alternate semesters of work and study.

The Co-op Program is open to undergraduate and graduate students in most academic disciplines. To be eligible students must:

- have declared a major.
- have completed a minimum of 24 undergraduate credits.
- have a 2.5 or better cumulative GPA for sophomores.
- have a 2.0 or better cumulative GPA for juniors and seniors.

Prior to placement, a student must have eligibility verified and must successfully complete a co-op orientation session.

Once placed, a student must enroll in the appropriate noncredit Co-op course. Special administrative fees for students registered for noncredit co-op experiences are shown in the *Schedule of Classes* for each semester.

Some credit arrangements are available through academic departments. For additional information contact Cooperative Education, Virginia Commonwealth University, 827 West Franklin Street, P.O. Box 842508, Richmond, VA 23284-2508 or call (804) 828-1579.

Courses in Cooperative Education

COP 298 Cooperative Education Experience. Semester course; no credit. Open to students who have been placed in an approved Co-op position with an agency, business, industry, or institution. The student works a maximum of 20 hours per week, completes all off-campus/on-campus assignments.

COP 398 Cooperative Education Experience. Semester course; no credit. Open to students who have been placed in an approved Co-op position with an agency, business, industry, or institution. The student works a maximum of 40 hours per week, completes all off-campus/on-campus assignments.

Continuing Education

Patricia Worley

(1976) BA 1974 Virginia Commonwealth University

Noncredit professional education programs allow practitioners of numerous disciplines to participate in continuing education. In many of these programs, Continuing Education Units (CEUs) are awarded. The Office of Community Programs coordinates many of the University's continuing education activities, including Mini-Med School and the Commonwealth Society, and awards all of the CEUs for the University.

Community Outreach Programs

The University demonstrates its commitment to serve as an active community partner by administering various outreach initiatives that address pressing social concerns. The office serves as an initial contact for community groups and then attempts to link students, faculty and staff to specific requests through existing programs such as the Community Service Associates and the Service Learning Associates.

A particular focus of community outreach programs has been the needs of urban youth. Many VCU students have become involved in programs such as: the Mentor Development Program, a program for training mentors who work with at-risk youth; Project TUTOR, a program that matches college student tutors with court-involved youth; Metro TEEN, a program that provides leadership training to a diverse group of area high school students and arranges internships; and Summer Discovery, an enrichment program for area middle school students. In addition, the office administers the University's Americorps and America Reads programs.

Center for International Programs

Arlene Jackson

Director, Center for International Programs (1993) BA 1972 and MA 1975 Fairleigh Dickinson University

The Center for International Programs (CIP) promotes a variety of faculty and student activities in a global context. CIP's mission is to advance the internationalization of the University in cooperation with the schools and the college, as well as other administrative offices. CIP currently offers programs and services in faculty exchanges, university overseas linkages and agreements of cooperation, study abroad and student exchanges, international student and scholar advising, international student recruitment and admissions, and the English Language Program – English as a second language.

The director advises faculty, departments, schools, and the college in their efforts to expand their international activities and linkages. She serves as the initial contact for off-campus groups and agencies requesting information on international activities at the University. She also drafts, in consultation with the appropriate VCU constituencies, agreements with overseas institutions.

For further information write the Center for International Programs, 916 West Franklin Street, P.O.

Box 843403, Richmond, VA 23284-3403, call (804) 828-8471, or FAX (804) 828-2552.

Study Abroad and Student Exchange

Tina S. Murray

(1996) BA 1985 American University; MA 1992 School for International Training

VCU students may extend their educational horizons by studying abroad in Europe, Asia, Africa, or Latin America. During each academic year, over 200 VCU students study abroad. Although courses taken abroad need not be taken for credit, their purpose is educational, not recreational.

CIP regularly administers summer study programs in Austria, Britain, France, Italy, and Spain, and has offered courses in Brazil, Indonesia, and Barbados recently.

VCU students may also participate in the International Student Exchange Program (ISEP), enabling them to study at member sites worldwide. This program offers direct enrollment and academic credit toward a student's degree program at home, as well as immersion in another country's language and culture, at a cost no higher than what the student would pay at VCU for tuition, room, and board. Credits earned by a VCU student through ISEP will appear on the transcript, but will not be included in the calculation of the student's cumulative GPA.

The CIP also administers the National Student Exchange program, by which VCU students may study at more than 100 state institutions throughout the United States, including Guam and Puerto Rico. Semester- or year-long exchanges are possible. In previous years, students have applied to several universities, including the University of Alaska/Fairbanks, Western Washington University and the University of New Mexico. Unlike the ISEP exchange, both credits and grades earned on exchange through NSE will appear on the VCU transcript.

For more information write or call CIP at the address or telephone number listed previously.

International Student and Scholar Services

Harlan L. Smith

(1997) BA 1989 University of Texas; MEd 1992 University of South Carolina; MA 1993 University of Texas at Tyler

This office provides assistance and information to all students (F-1 and J-1), scholars/faculty/researchers (J-1), temporary employees (H-1 B, TN), and dependents.

Both the MCV and Academic Campuses offer international student advising to assist international students with personal, financial, cultural, and social adjustment issues, and to help guide them within the University community so they may successfully pursue their academic goals. The international student adviser (FSA) assists international students and scholars in maintaining their nonimmigrant student visas by issuing and processing the necessary immigration documentation in accordance with relevant immigration rules and regulations.

The International Student and Scholar Services office on the Academic Campus is housed in the CIP. On the

MCV Campus the office is located in Room 202A in Hunton Hall.

International Student Union and Student Activities

The International Student Adviser works with the International Student Union (ISU) – the official club of international students attending the University. Membership is open to all international students, faculty, and staff interested in meeting and developing friendships with people of different cultural and national backgrounds.

In addition, the ISU promotes international understanding and awareness through its activities on and off campus. VCU is supportive of the ISU and its educational, cultural, and social activities. International students are encouraged to join and to participate in the various ISU functions. This participation is a valuable component of the students' entire educational experience.

VCU offers a number of extra-curricular activities to all students, complementing their formal education. These activities provide opportunities for the exchange of ideas, personal development and growth, and leadership training. And they aid international students in their adjustment to American campus life and provide the opportunity to practice spoken English through close contact with American friends.

English Language Program

Nancy A. Centrella

(1991) BA 1979 University of Massachusetts; MA 1981 Gordon-Conwell Theological Seminary; MA 1988 University of Massachusetts

The English Language Program (ELP) offers an intensive English as a second language program for international students, permanent residents, and refugees who wish to improve their English language skills for undergraduate or graduate study at American universities, or for career and personal purposes.

A full range of courses is offered at the pre-intermediate through advanced levels. These courses include grammar, writing, speaking, listening, reading, vocabulary, pronunciation/accent reduction, TOEFL preparation, computer applications and various electives.

Based on the applicant's Test of English as a Foreign Language (TOEFL) score, admission to ELP may be recommended by the Office of Admissions at the time of application review. Students who wish to take English as a second language courses can apply directly to ELP.

Placement in ELP is based on the results of the English Language Placement Examination. This two and one-half hour test consists of the following: writing and grammar, reading comprehension and vocabulary, and listening, speaking, and pronunciation. Students receive their test results by meeting individually with an ELP adviser who will make recommendations, answer questions, and register the student in the appropriate ELP course or courses.

For further information come by the ELP Office in Room 205 at 916 West Franklin Street, call (804) 828-2551, or FAX (804) 828-2552.

International Student Recruitment and Admissions

Sheldon Gary

(1997) BA 1967 University of Minnesota;MPIA 1970 University of Pittsburgh

VCU encourages qualified international students, both immigrant and nonimmigrant, to seek admission to the University. Complete information and application materials are available by writing the Office of International Admissions, Virginia Commonwealth University, 916 West Franklin Street, P.O. Box 843043, Richmond, VA 23284-3043, USA, or by calling (804) 828-6016.

English Language Proficiency Requirements

To ensure maximum benefits from academic study at VCU, all nonnative English-speaking applicants, regardless of immigration status, must provide evidence of English language proficiency before admission and/or before enrollment in the University.

English language proficiency is evaluated on factors such as length of stay in the United States, amount and type of formal American education, TOEFL scores, and Scholastic Aptitude Test (SAT) scores.

In general, VCU requires a minimum score of 550 on TOEFL for admission, though some programs may require a higher TOEFL score. The University reserves the right to require additional testing and study in the VCU English Language Program prior to full-time enrollment in University courses.

Nonimmigrants (students with temporary U.S. visas)

Because of time constraints involved in processing international applications and obtaining visas, prospective international applicants should submit the application for admission at least nine months before they plan to enroll. In order for immigration documents to be issued, all required admission credentials must be submitted no later than eight weeks before registration for classes. Applicants who are unable to meet the credentials deadline should plan to defer the intended term of entry.

As required by U.S. regulations and by VCU admission policies, nonimmigrant applicants must demonstrate satisfactory academic achievement, adequate English proficiency through evaluation, and the ability to finance all educational and living expenses.

Refer to the freshman admission guidelines, transfer admission guidelines, and admission procedures for specific program requirements in Part II of this *Bulletin*.

Applicants must submit academic records that demonstrate successful completion of secondary school education – usually 12 years of pre-university study in their own country.

VCU is unable to provide financial support for international undergraduate students. Therefore, applicants who need a study or F-1 visa or a visiting scholar or J-1 visa must also present documented evidence of available financial support to cover living and educational expenses while studying at VCU.

U.S. Immigration and Naturalization Service regulations usually do not allow nonimmigrant students to study at VCU as special, nondegree-seeking students.

The University registers international students only if they present a current and valid visa that permits enrollment in a university. Proof of current visa-type must be submitted to the Office of Admissions before enrollment, unless the applicant is requesting an F-1 or J-1 visa. Students possessing these visas admitted to VCU must submit copies of all immigration documents to the international student adviser before enrolling in classes.

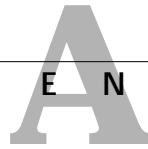
Immigrants (permanent residents, resident aliens, and asylum applicants)

Since immigrant applicants usually are in the U.S. at the time an application is submitted, these students must meet the same application deadlines as American citizens.

If educated in the U.S., immigrant applicants are considered under the same academic policies applicable to U.S. citizens. If educated outside this country, the same academic records are required as those for nonimmigrant applicants.

VCU requires detailed information about U.S. immigration status. Proof of permanent residency must be submitted with the admission application.

Refer to the freshman admission guidelines, transfer admission guidelines, and admission procedures for specific program requirements.



Board of Visitors and University Administration

Board of Visitors

Appointed by the Governor of Virginia

Yvonne E. R. Benner
Midlothian

William C. DeRusha
Richmond

Edward L. Flippen
Richmond

M. Boyd Marcus, Jr.
Richmond

Steven A. Markel
Glen Allen

Angela Miles
Ashland

W. Baxter Perkinson, Jr.
Richmond

Diane Linen Powell
Virginia Beach

Robert E. Rigsby
Richmond

Lindley T. Smith
Midlothian

Ted L. Smith
Richmond

Clarence L. Townes, Jr.
Richmond

David A. Vaughan
Lynchburg

Jay M. Weinberg, Rector
Richmond

H. George White, Jr.
Winchester

Percy Wootton
Richmond

University Administration

Eugene P. Trani, BA, MA, PhD
President

Edwin E. Blanks, BS, MS, CSP
Vice Provost for Academic Administration

William L. Dewey, BS, MS, PhD
Vice President for Research and Graduate Studies

Donald C. J. Gehring, BA, JD
Vice President for External Relations

John D. Dayhoff, AA, BS, MA
Vice Provost for Information Technology

Carl R. Fischer, BS, MS, MPH
*Associate Vice President for Health Sciences and
Chief Executive Officer, MCV Hospitals*

Grace E. Harris, BS, MSSW, MA, PhD
Provost and Vice President for Academic Affairs

David R. Hiley, BA, MA, PhD
Vice Provost for Academic Affairs

Hermes A. Kontos, MD, PhD
*Vice President for Health Sciences and
Dean, School of Medicine*

Sue Ann Messmer, BA, MA
Vice Provost for University Outreach

Henry G. Rhone, BA, MEd, EdD
Vice Provost for Student Affairs

Paul W. Timmreck, ABEd, MPA
Vice President for Finance and Administration

Peter L. Wyeth, BA, MEd
Vice President for Advancement

Academic Deans

College of Humanities and Sciences

Stephen D. Gottfredson

*Dean (1997) BA 1971 University of Oregon; MA 1977 and PhD
1977 Johns Hopkins University*

Albert T. Sneden

*Associate Dean and Professor of Chemistry (1977) BS 1968
Carnegie Mellon University; PhD 1975 Brandeis University*

John H. Borgard

Associate Dean and Assistant Vice Provost for Academic Affairs (1971) AB 1960 and MEd 1964 Marquette University; PhD 1974 Loyola University

Arthur J. Seidenberg

Assistant Dean for Undergraduate Academic Affairs, Coordinator of Pre-Health Sciences Advising and Associate Professor of Biology (1968) BS 1961 Brooklyn College; PhD 1969 University of Illinois

School of Allied Health Professions**Cecil B. Drain**

Professor and Dean (1993) BSN 1976 University of Arizona; MS 1980 University of Arizona; PhD 1986 Texas A & M University

Delores G. Clement

Associate Professor and Associate Dean (1988) BA 1970 Mount Saint Joseph; MA 1979 Ohio State University; MS 1981 Rush University; DrPH 1988 University of California, Berkeley

Stephen C. Harvey

Assistant Professor and Assistant Dean (1977) MEd 1975 Virginia Commonwealth University

Debra A. Ropelewski

Assistant Dean (1983) BS 1982 Virginia Polytechnic Institute and State University; MBA 1988 Virginia Commonwealth University

School of the Arts**Richard E. Toscan**

Dean and Professor of Theatre (1996) BA 1963 Purdue University; MA 1964 and PhD 1970 University of Illinois, Urbana-Champaign

Thomas H. DeSmidt

Associate Dean and Professor of Painting and Printmaking (1971) AA Lincoln College; BFA Layton School of Art; MFA 1970 Syracuse University

Paul E. Petrie

Associate Dean and Professor of Interior Design (1984) BID University of Manitoba; MFA 1976 Syracuse University

Daniel J. Reeves

Assistant Dean and Director of Graduate Studies and Professor of Art Education (1978) BA West Liberty State College; EdM University of Pittsburgh; EdD 1971 Illinois State University

Lydia C. Thompson

Assistant Dean and Assistant Professor (1990) BFA 1983 Ohio State University; MFA 1985 New York State College of Ceramics

School of Business**Howard P. Tuckman**

Dean and Professor of Economics (1993) BS 1963 Cornell University; MS and PhD 1970 University of Wisconsin

E. G. Miller

Associate Dean for Administration and Associate Professor of Insurance and Management Science (1973) BS, MA and PhD 1976 University of Alabama; CLU; CPCU

Walter S. Griggs, Jr.

Associate Dean for Undergraduate Studies and Associate Professor of Business Law (1971) MH and JD University of Richmond; EdD 1979 College of William and Mary

Charles J. Gallagher

Associate Dean for External Affairs and Associate Professor of Economics (1971) BS Rider College; PhD 1971 West Virginia University

School of Dentistry**Lindsay M. Hunt, Jr.**

Professor of General Practice and Dean (1985) BA 1961 University of Oklahoma; DDS 1965 and PhD 1971 Baylor University

James H. Revere, Jr.

Assistant Professor of Orthodontics and Executive Associate Dean (1968) BA 1961 University of Richmond; DDS 1965 Medical College of Virginia

Marshall P. Brownstein

Associate Professor of Pediatric Dentistry and Assistant Dean for Admissions and Student Affairs (1975) BS 1963 and DDS 1967 University of Maryland

Thomas C. Burke

Assistant Dean for Development and Continuing Education (1986) BS 1978 and MS 1995 Virginia Commonwealth University

Betsy A. Hagan

Associate Professor of General Practice and Assistant Dean for Clinical Affairs (1980) BS 1974 Virginia Polytechnic Institute and State University; DDS 1978 Medical College of Virginia of Virginia Commonwealth University; MBA 1984 Virginia Commonwealth University

James E. Hardigan

Associate Professor and Assistant Dean for Administrative Affairs (1975) BS 1968 and MBA 1970 Northeastern University; PhD 1975 Cornell University

Harvey A. Schenkein

Professor of Periodontics and Microbiology and Immunology and Assistant Dean for Research (1978) BA 1970, DDS 1974 and PhD 1978 State University of New York

School of Education**John S. Oehler, Jr.**

Dean and Professor of Education (1970) BA Davidson College; MAT and EdD 1973 University of North Carolina

Diane J. Simon

Associate Dean and Associate Professor of Special Education (1988) BS Hampton University; MA and PhD 1981 New York University

School of Engineering**Henry A. McGee, Jr.**

Founding Dean and Professor of Chemical Engineering (1995) BChE 1951 and PhD 1955 Georgia Institute of Technology

Robert J. Mattauch

Associate Dean for Administration, Commonwealth Professor and Chair, Electrical Engineering Program (1996) BS 1962 Carnegie Institute of Technology, ME 1963 and PhD 1967 North Carolina State University

Thomas W. Haas

Associate Dean for Academic and Faculty Affairs, Director, Commonwealth Graduate Engineering Program and Professor of Mechanical Engineering (1983) BS 1961 State University of New York, Buffalo, MS 1962 Pennsylvania State University, MA 1965 and PhD 1968 Princeton University

Gerald E. Miller

Associate Dean for Graduate Affairs and Professor and Chair, Biomedical Engineering Program (1996) BS 1971, MS 1975, and PhD 1978 Pennsylvania State University

Robert A. Heinz

Associate Dean for Industrial Affairs and Professor of Mechanical Engineering (1997) BS 1965 and MS 1966 Lehigh University, PhD 1971 Carnegie Mellon University

School of Graduate Studies**Jack L. Haar**

Dean of Graduate Studies and Professor of Anatomy (1971) BS 1964 Capital University; MS 1966 University of Arizona; PhD 1970 Ohio State University

Sherry T. Sandkam

Associate Dean (1981) BA 1970 Longwood College; MBA 1986 and PhD 1996 Virginia Commonwealth University

School of Medicine**Hermes A. Kontos**

Vice President for Health Sciences, Dean, School of Medicine, and Professor of Internal Medicine (1964) MD 1958 University of Athens, Greece; PhD 1967 Medical College of Virginia

Heber H. Newsome

Professor of Surgery and Senior Associate Dean, School of Medicine (1970) BS 1958 Wake Forest University; MS 1962 and MD 1962 Tulane University

Jan F. Chlebowski

Professor of Biochemistry and Molecular Biophysics and Associate Dean for Graduate Education (1979) BA 1965 St. Mary's College; PhD 1969 Case Western Reserve University

Ralph R. Clark, III

Assistant Professor of Internal Medicine and Associate Dean for Clinical Activities (1990) BS 1983 College of William & Mary; MD 1987 Medical College of Virginia of Virginia Commonwealth University

William M. Gleason

Assistant Professor and Associate Dean for Administration (1980) AB 1969 University of North Carolina, Chapel Hill; MBA 1973 Indiana University

Carol L. Hampton

Associate Professor and Associate Dean for Faculty and Instructional Development (1987) BA 1965 University of Arkansas; MMS 1969 Tulane University

Cynthia M. Heldberg

Associate Professor and Associate Dean for Admissions (1986) BA 1965 Brown University; MA 1983 West Virginia College; PhD 1997 Virginia Commonwealth University

Paul E. Mazmanian

Professor of Preventive Medicine and Community Health and Associate Dean for Continuing Medical Education (1978) BS 1972 Wayne State University; MA 1975 Michigan State University; PhD 1979 University of Michigan

James M. Messmer

Associate Professor of Radiology and Associate Dean for Medical Education (1981) BA 1968 Rockhurst College; MD 1972 St. Louis University; MA 1995 Virginia Commonwealth University

Mary D. Nettleman

Associate Professor of Internal Medicine and Associate Dean for Primary Care (1996) BS 1977 Ohio University; MD 1981 Vanderbilt University; MS 1993 University of Iowa

Robert P. Perry

Associate Professor of Internal Medicine and Associate Dean for Graduate Medical Education (1979) AB 1972 Harvard University; MD 1976 University of Rochester

Karen Sanders

Associate Dean for McGuire Veterans Administration Medical Center Affairs

Hugo R. Seibel

Professor of Anatomy and Associate Dean for Student Activities (1967) BS 1960 Brooklyn College; PhD 1967 University of Rochester

Donald M. Switz

Professor of Internal Medicine and Associate Dean for Ambulatory Care Activities for MCV Hospitals of Virginia Commonwealth University (1970) BA 1958 Carleton College; MD 1962 University of Chicago

School of Nursing**Nancy F. Langston**

Dean (1991) BSN 1966 University of Arkansas; MN 1972 Emory University; PhD 1977 Georgia State University

W. Richard Cowling, III

Associate Professor and Associate Dean (1993) BSN 1972 University of Virginia; MS 1979 Medical College of Virginia of Virginia Commonwealth University; PhD 1983 New York University

Janet B. Younger

Professor and Associate Dean for Undergraduate Programs (1984) BS 1967 Medical College of Virginia; MEd 1970 University of Virginia; MS 1972 Virginia Commonwealth University; PhD 1984 University of Virginia

Anthony J. DeLellis

Assistant Dean for Administration (1985) BA 1970 University of Delaware; MA 1973 Central Michigan University; EdD 1977 University of Virginia

School of Pharmacy**Victor A. Yanchick**

Professor and Dean (1996) BS 1962 and MS 1966 University of Iowa; PhD 1968 Purdue University

H. Thomas Karnes

Professor and Associate Dean for Research and Graduate Studies (1984) BS 1977 Illinois State University; MS 1980 and PhD 1984 University of Florida

Thomas P. Reinders

Associate Professor and Associate Dean for Admissions and Student Affairs (1974) BS 1970 and PharmD 1972 University of Cincinnati

William E. Smith

Associate Professor and Associate Dean for Administrative Affairs (1997) PharmD 1965 and MPH 1976 University of California; PhD 1994 Auburn University

School of Social Work

Frank R. Baskind

*Dean and Professor of Social Work (1992) AB 1967 Fordham
University;MSW 1971 and PhD 1978 University of Connecticut*

Ann M. Nichols-Casebolt

*Associate Dean, Director of the PhD Program and Professor of
Social Work (1993) BA 1971, MSSW 1978 and PhD 1984
University of Wisconsin*

Rights of Students Under the Family Educational Rights and Privacy Act

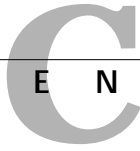
Pursuant to a federal statute enacted to protect the privacy rights of students (Family Educational Rights and Privacy Act of 1974, as amended, enacted as Section 438 of the General Education Provisions Act), eligible students of Virginia Commonwealth University are permitted to inspect and review education records of which the student is the subject. A list of education records maintained by the University is available from the Office of Records and Registration. A statement of University policy concerning inspection and disclosure of education records has been formulated in compliance with the federal statute. Copies of the policy are also available from the Office of Records and Registration.

Generally, the Act provides that no personally identifiable information will be disclosed without the student's

consent, except for directory information and information to other school officials with a legitimate educational interest. When personally identifiable information, other than directory information, is disclosed, a record will be maintained of these disclosures. This record is also available for inspection and review by the student.

If an eligible student feels that his or her education record is inaccurate, misleading, or otherwise in violation of the student's privacy or other rights, the student may request an amendment to the record.

Should the University fail to comply with the requirements of the Act, the student has the right to file a complaint with the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202.



Determination of Student Classification for In-State Tuition Purposes

Section 23-7.4, of the *Code of Virginia*, governs eligibility for in-state tuition. Effective for students enrolling on or after July 1, 1996, the statute provides:

§ 23-7.4. Eligibility for in-state tuition charges. –

A. For purposes of this section and §§ 23-7.4:1, 23-7.4:2 and 23-7.4:3, the following definitions shall apply:

“Date of the alleged entitlement” means the first official day of class within the term, semester or quarter of the student’s program.

“Dependent student” means one who is listed as a dependent on the federal or state income tax return of his parents or legal guardian or who receives substantial financial support from his spouse, parents or legal guardian. It shall be presumed that a student under the age of twenty-four on the date of the alleged entitlement receives substantial financial support from his parents or legal guardian, and therefore is dependent on his parents or legal guardian, unless the student (i) is a veteran or an active duty member of the U.S. Armed Forces; (ii) is a graduate or professional student; (iii) is married; (iv) is a ward of the court or was a ward of the court until age 18; (v) has no adoptive or legal guardian when both parents are deceased; (vi) has legal dependents other than a spouse; or (vii) is able to present clear and convincing evidence that he is financially self-sufficient.

“Domicile” means the present, fixed home of an individual to which he returns following temporary absences and at which he intends to stay indefinitely. No individual may have more than one domicile at a time. Domicile, once established, shall not be affected by mere transient or temporary physical presence in another jurisdiction.

“Domiciliary intent” means present intent to remain indefinitely.

“Emancipated minor” means a student under the age of eighteen on the date of the alleged entitlement whose parents or guardians have surrendered the right to his care, custody and earnings and who no longer claim him as a dependent for tax purposes.

“Full-time employment” means employment resulting in, at least, an annual earned income reported for tax purposes equivalent to fifty work weeks of forty hours at minimum wage.

“Independent student” means one whose parents have surrendered the right to his care, custody and earnings, do not claim him as a dependent on federal or state income tax returns, and have ceased to provide him substantial financial support.

“Special arrangement contract” means a contract

between a Virginia employer or the authorities controlling a federal installation or agency located in Virginia and a public institution of higher education for reduced rate tuition charges as described § 23-7.4:2 G.

“Substantial financial support” means financial support in an amount which equals or exceeds that required to qualify the individual to be listed as a dependent on federal and state income tax returns.

“Unemancipated minor” means a student under the age of eighteen on the date of the alleged entitlement who is under the legal control of and is financially supported by either of his parents, legal guardian or other person having legal custody.

“Virginia employer” means any employing unit organized under the laws of Virginia or having income from Virginia sources regardless of its organizational structure, or any public or nonprofit organization authorized to operate in Virginia.

B. To become eligible for in-state tuition, an independent student shall establish by clear and convincing evidence that for a period of at least one year immediately prior to the date of the alleged entitlement, he was domiciled in Virginia and had abandoned any previous domicile, if such existed.

To become eligible for in-state tuition, a dependent student or unemancipated minor shall establish by clear and convincing evidence that for a period of at least one year prior to the date of the alleged entitlement, the person through whom he claims eligibility was domiciled in Virginia and had abandoned any previous domicile, if such existed.

In determining domiciliary intent, all of the following applicable factors shall be considered: continuous residence for at least one year prior to the date of alleged entitlement, state to which income taxes are filed or paid, driver’s license, motor vehicle registration, voter registration, employment, property ownership, sources of financial support, military records, a written offer and acceptance of employment following graduation, and any other social or economic relationships with the Commonwealth and other jurisdictions.

Domiciliary status shall not ordinarily be conferred by the performance of acts which are auxiliary to fulfilling educational objectives or are required or routinely performed by temporary residents of the Commonwealth. Mere physical presence or residence primarily for educational purposes shall not confer domiciliary status. A matriculating student who has entered an institution and is classified as an out-of-state student shall be required to rebut by clear and convincing evidence the

presumption that he is in the Commonwealth for the purpose of attending school and not as a bona fide domiciliary.

Those factors presented in support of entitlement to in-state tuition shall have existed for the one-year period prior to the date of the alleged entitlement. However, in determining the domiciliary intent of active duty military personnel residing in the Commonwealth, or the domiciliary intent of their dependent spouse or children who claim domicile through them, who voluntarily elect to establish Virginia as their permanent residence for domiciliary purposes, the requirement of one year shall be waived if all other conditions for establishing domicile are satisfied.

C. A married person may establish domicile in the same manner as an unmarried person.

An emancipated minor may establish domicile in the same manner as any other independent student. A non-military student whose parent or spouse is a member of the armed forces may establish domicile in the same manner as any other student.

Any alien holding an immigration visa or classified as a political refugee shall also establish eligibility for in-state tuition in the same manner as any other student. However, absent congressional intent to the contrary, any person holding a student or other temporary visa shall not have the capacity to intend to remain in Virginia indefinitely and, therefore, shall be ineligible for Virginia domicile and for in-state tuition charges.

The domicile of a dependent student shall be rebuttably presumed to be the domicile of the parent or legal guardian claiming him as an exemption on federal or state income tax returns currently and for the tax year prior to the date of the alleged entitlement or providing him substantial financial support.

For the purposes of this section, the domicile of an unemancipated minor or a dependent student eighteen years of age or older may be either the domicile of the parent with whom he resides, the parent who claims the student as a dependent for federal and Virginia income tax purposes for the tax year prior to the date of the alleged entitlement and is currently so claiming the student, or the parent who provides the student substantial financial support. If there is no surviving parent or the whereabouts of the parents are unknown, then the domicile of an unemancipated minor shall be the domicile of the legal guardian of such unemancipated minor unless there are circumstances indicating that such guardianship was created primarily for the purpose of conferring a Virginia domicile on the unemancipated minor.

D. It is incumbent on the student to apply for change in domiciliary status on becoming eligible for such change. Changes in domiciliary status shall only be granted prospectively from the date such application is received.

A student who knowingly provides erroneous information in an attempt to evade payment of out-of-state fees shall be charged out-of-state tuition fees for each term, semester or quarter attended and may be subject to dismissal from the institution. All disputes related to the veracity of information provided to establish Virginia domicile shall be appealable through the due process procedure required by § 23-7.4:3. (1984, c. 422; 1985, cc.

179, 572; 1988, c. 124; 1989, c. 371; 1990, c. 680; 1991, c. 590; 1996, cc. 931, 981.)

The 1996 amendments. – The 1996 amendments by cc. 931 and 981 are identical, and rewrote this section.

§ 23-7.4:1. Waiver of tuition and required fees for certain students. – A. 1. All sums appropriated by law for the purpose of effecting the provisions of this subsection shall be used for the sole purpose of providing for free tuition and required fees at the state-supported institutions and institutional charges, general or college fees, or any charges by whatever term referred to, board and room rent, and books and supplies at any education or training institution of collegiate or secondary grade in the Commonwealth of Virginia approved in writing by the Director of the Department of Veterans' Affairs for the use and benefit of the children not under sixteen and not over twenty-five years of age either of whose parents was killed in action, is missing in action or a prisoner of war in any armed conflict subsequent to December 6, 1941, while serving in the Army, Navy, Marine Corps, Air Force or Coast Guard of the United States, or was or is or may hereafter become totally and permanently disabled due to service during such periods if such parent (i) was a citizen of Virginia at the time of entering such service; (ii) is and has been, for at least ten years immediately prior to the date on which application was submitted by or on behalf of such child for admission to any education or training institution of collegiate or secondary grade in this Commonwealth, a citizen of Virginia; (iii) if such parent is deceased, was a citizen of Virginia on the date of his or her death and had been a citizen of Virginia for at least ten years immediately prior to his or her death; or (iv) if such parent is deceased and the surviving parent had been, at some time previous to marrying the deceased parent, a citizen of Virginia for at least ten years and is and has been a citizen of Virginia for at least ten years immediately prior to the date on which application was submitted by or on behalf of such child for admission to any education or training institution of collegiate or secondary grade in this Commonwealth.

2. Such children, upon recommendation of the Director of the Department of Veterans' Affairs, shall be admitted to state institutions of secondary or higher education, free of tuition and all required fees. Each state-supported institution shall include in its catalogue or equivalent publication a statement describing the benefits provided by this subsection.

3. The amounts that may be or may become due by reason of attendance at any such educational or training institution, not in excess of the amount specified in subdivision 5, shall be payable on vouchers approved by the Director of the Department of Veterans' Affairs.

4. The Director of the Department of Veterans' Affairs shall determine the eligibility of the children who may make application for the benefits provided for in this subsection and shall satisfy himself of the attendance and satisfactory progress of such children at such institution and of the accuracy of the charge or charges submitted on account of the attendance of any such children at any such institution. However, neither the Director

nor any employee of the Department of Veterans' Affairs shall receive any compensation for such services.

5. To carry out the provisions of this subsection, there may be expended such funds as shall be appropriated for the purpose in the general appropriation acts. However, the maximum amount to be expended for each such child shall not be more, when combined with any federal allowance which may be made for such tuition, charges, fees, rent, books and supplies, than the actual amount of the benefits provided for in this subsection.

6. For the purposes of this subsection, user fees, such as room and board charges, shall not be included in this authorization to waive tuition and fees. However, all required fees, educational and auxiliary, shall be waived along with tuition.

B. Any child between the ages of sixteen and twenty-five whose parent or any person whose spouse has been killed in the line of duty while employed or serving as a law-enforcement officer, firefighter, member of a rescue squad, sworn law-enforcement officer, special agent of the Department of Alcoholic Beverage Control, state correctional, regional or local jail officer, regional jail or jail farm superintendent, sheriff, deputy sheriff, or member of the Virginia National Guard while such member is serving in the Virginia National Guard or as a member of the United States Armed Forces, shall be entitled to free undergraduate tuition and required fees at any public institution of higher education in Virginia under the following conditions:

1. The chief administrative officer of the Alcoholic Beverage Control Board, emergency medical services agency, law-enforcement agency, or other appropriate agency or the Superintendent of State Police certifies that the deceased parent or spouse was employed or serving as a law-enforcement officer or a firefighter or member of a rescue squad or in any other capacity as specified in this section and was killed in the line of duty while serving or living in the Commonwealth; and

2. The child or spouse shall have been offered admission to a public institution of higher education. Any child or spouse who believes he is eligible shall apply to the public institution of higher education to which he has been admitted for the benefits provided by this subsection. The institution shall determine the eligibility of the applicant for these benefits and shall also ascertain that the recipients are in attendance and are making satisfactory progress. The amounts payable for tuition and required fees for the applicants shall be waived by the institution accepting the students.

For the purposes of this subsection, user fees, such as room and board charges, shall not be included in this authorization to waive tuition and fees. However, all required fees, educational and auxiliary, shall be waived along with tuition.

C. Senior citizens shall be entitled to free tuition and required fees pursuant to the provisions of Chapter 4.5 (§ 23-38.54 et seq.) of Title 23.

D. Tuition and required fees may be waived for a student from a foreign country enrolled in a public institution of higher education through a student exchange program approved by such institution, provided the number of foreign students does not exceed the number of students paying full tuition and required fees to the

institution under the provisions of the exchange program for a given three-year period. (1996, cc. 931, 981.)

§ 23-7.4.2. Eligibility for in-state or reduced tuition for students not domiciled in Virginia; members of the National Guard of the Commonwealth of Virginia.

– A. A nonmilitary student whose parent or spouse is a member of the armed forces may establish domicile in the same manner as any other student. However, a nonmilitary student, not otherwise eligible for in-state tuition, whose parent or spouse is a member of the military residing in the Commonwealth pursuant to military orders and claiming a state other than Virginia on their State of Legal Residence Certificate, shall be entitled to in-state tuition charges when the following conditions are met: (i) if the student is a child of a member of the armed forces, then the nonmilitary parent shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition charges, resided in Virginia, been employed full time and paid individual income taxes to Virginia. Such student shall be eligible for in-state tuition charges only if the nonmilitary parent claims him as a dependent for Virginia and federal income tax purposes, as evidenced by claiming him as a dependent on an individual or joint return; or (ii) if the student is the spouse of a member of the armed forces, then such student shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition, resided in Virginia, been employed full time and paid individual income taxes to Virginia; or (iii) if the student is the child or the spouse of a member of the armed forces, then the student shall be entitled to in-state tuition charges for a maximum of one year during the period that the military parent or spouse is residing in the Commonwealth. Any student whose spouse or parent is a member of the armed forces shall be eligible for in-state tuition charges for so long as the conditions of clauses (i) and (ii) of this subsection continue to be met. Military dependents provided in-state tuition for one year during the period the military parent or spouse is residing in Virginia shall be counted as out-of-state students for admissions, enrollment and tuition and fee revenue policy purposes.

B. Students who live outside this Commonwealth and have been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement for in-state tuition shall be eligible for in-state tuition charges if such student has paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Students claimed as dependents for federal and Virginia income tax purposes who live outside this Commonwealth shall become eligible for in-state tuition charges if the nonresident parents claiming them as dependents have been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement and paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Such students shall continue to be eligible for in-state tuition charges for so long as they or their qualifying parent is employed full time in Virginia,

paying Virginia income taxes on all taxable income earned in this Commonwealth and the student is claimed as a dependent for Virginia and federal income tax purposes.

C. Any person who (i) is a member of the National Guard of the Commonwealth of Virginia and has a minimum remaining obligation of two years, (ii) has satisfactorily completed required initial active duty service, (iii) is satisfactorily performing duty in accordance with regulations of the National Guard, and (iv) is enrolled in any state institution of higher education, any private, accredited and nonprofit institution of higher education in the Commonwealth whose primary purpose is to provide collegiate or graduate education and not to provide religious training or theological education, any course or program offered by any such institution or any public vocational or technical school shall be eligible for a grant in the amount of one-half of the tuition not exceeding \$500 per term, semester or quarter. No person shall receive grants totaling more than \$1,000 in any one year. Application for a grant shall be made to the Department of Military Affairs. Grants shall be awarded from funds available for the purpose by such Department.

D. Notwithstanding the provisions of § 23-7.4 or any other provision of the law to the contrary, the governing board of any state institution of higher education or the governing board of the Virginia Community College System may charge the same tuition as is charged to any person domiciled in Virginia pursuant to the provisions of § 23-7.4 to:

1. Any person enrolled in one of the institution's programs designated by the State Council of Higher Education who is domiciled in and is entitled to reduced tuition charges in the institutions of higher learning in any state which is a party to the Southern Regional Education Compact which has similar reciprocal provisions for persons domiciled in Virginia;

2. Any student from a foreign country who is enrolled in a foreign exchange program approved by the state institution during the same period that an exchange student from the same state institution, who is entitled to in-state tuition pursuant to § 23-7.4, is attending the foreign institution; and

3. Any high school or magnet school student, not otherwise qualified for in-state tuition, who is enrolled in courses specifically designed as part of the high school or magnet school curriculum in a community college for which he may, upon successful completion, receive high school and community college credit pursuant to a dual enrollment agreement between the high school or magnet school and the community college.

E. The governing board of the Virginia Community College System may charge reduced tuition to any person enrolled in one of the System's institutions who lives within a thirty-mile radius of a Virginia institution, is domiciled in, and is entitled to in-state tuition charges in the institutions of higher learning in any state which is contiguous to Virginia and which has similar reciprocal provisions for persons domiciled in Virginia. This subsection shall expire on July 1, 1998.

F. The advisory board of Clinch Valley College and the board of visitors of the University of Virginia may charge

reduced tuition to any person enrolled at Clinch Valley College who lives within a fifty-mile radius of the College, is domiciled in, and is entitled to in-state tuition charges in the institutions of higher learning in Kentucky, if Kentucky has similar reciprocal provisions for persons domiciled in Virginia.

Any out-of-state students granted in-state tuition pursuant to this subsection and subsection E shall be counted as out-of-state students for the purposes of determining admissions, enrollment, and tuition and fee revenue policies.

G. Public institutions of higher education may enter into special arrangement contracts with Virginia employers or authorities controlling federal installations or agencies located in Virginia. The special arrangement contracts shall be for the purpose of providing reduced rate tuition charges for the employees of the Virginia employers or federal personnel when the employers or federal authorities are assuming the liability for paying, to the extent permitted by federal law, the tuition for the employees or personnel in question and the employees or personnel are classified by the requirements of this section as out-of-state.

Special arrangement contracts with Virginia employers or federal installations or agencies may be for group instruction in facilities provided by the employer or federal authority or in the institution's facilities or on a student-by-student basis for specific employment-related programs.

Special arrangement contracts shall be valid for a period not to exceed two years and shall be reviewed for legal sufficiency by the Office of the Attorney General prior to signing. All rates agreed to by the public institutions shall be at least equal to in-state tuition and shall only be granted by the institution with which the employer or the federal authorities have a valid contract for students for whom the employer or federal authorities are paying the tuition charges.

All special arrangement contracts with authorities controlling federal installations or agencies shall include a specific number of students to be served at reduced rates.

Nothing in this subsection shall change the domiciliary status of any student for the purposes of enrollment reporting or calculating the proportions of general funds and tuition and fees contributed to the cost of education. (1996, cc. 931, 981.)

§ 23-7.4.3. Determinations of eligibility; appeals and guidelines.

– A. Each public institution of higher education shall establish an appeals process for those students who are aggrieved by decisions regarding eligibility for in-state or reduced tuition charges pursuant to §§ 23-7.4 and 23-7.4.2. The Administrative Process Act (§ 9-6.14:1 et seq.) shall not apply to these administrative reviews.

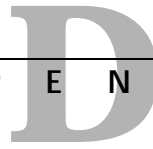
An initial determination shall be made. Each appeals process shall include an intermediate review of the initial determination and a final administrative review. The final administrative decision shall be in writing. A copy of this decision shall be sent to the student. Either the intermediate review or the final administrative review shall be conducted by an appeals committee con-

sisting of an odd number of members. No person who serves at one level of this appeals process shall be eligible to serve at any other level of this review. All such due process procedures shall be in writing and shall include time limitations in order to provide for orderly and timely resolutions of all disputes.

Any party aggrieved by a final administrative decision shall have the right to review in the circuit court for the jurisdiction in which the relevant institution is located. A petition for review of the final administrative decision shall be filed within thirty days of receiving the written decision. In any such action, the institution shall forward the record to the court, whose function shall be only to determine whether the decision reached by the institution could reasonably be said, on the basis of the record, not to be arbitrary, capricious or otherwise contrary to law.

B. To ensure the application of uniform criteria in administering this section and determining eligibility for in-state tuition charges, the State Council of Higher Education shall issue and from time to time revise guidelines, including domiciliary status questions to be incorporated by all state institutions of higher education in their admissions applications. These guidelines shall not be subject to the Administrative Process Act.

An advisory committee, composed of at least ten representatives of institutions of higher education, shall be appointed by the Council each year to cooperate with the Council in developing the guidelines for determining eligibility or revisions thereof. The Council shall consult with the Office of the Attorney General and provide opportunity for public comment prior to issuing any such guidelines. (1996, cc. 931, 981.)



Accreditation

University Accreditation

Commission on Colleges of the Southern Association of Colleges and Schools.

Academic Program Accreditations

College of Humanities and Sciences

Chemistry (bachelor's, master's, and doctoral degrees) – The American Chemical Society
 Computer Science (bachelor's degree) – Computer Science Accreditation Board of the Computer Science Accreditation Committee
 Mass Communications (bachelor's and master's degrees) – American Council on Education for Journalism
 Psychology (doctoral degree) – American Psychological Association
 Public Administration (master's degree) – National Association of Schools of Public Affairs and Administration
 Urban and Regional Planning (master's degree) – Planning Accreditation Board

School of Allied Health Professions

Clinical Laboratory Sciences – National Accrediting Agency for Clinical Laboratory Sciences
 Health Administration (master's degree) – Accrediting Commission on Education for Health Services Administration
 Nurse Anesthesia (master's degree) – Council on Accreditation of Nurse Anesthesia Educational Programs
 Occupational Therapy (bachelor's and master's degree) – Accreditation Council for Occupational Therapy Education
 Patient Counseling (certificate) – Association for Clinical Pastoral Education
 Physical Therapy (master's degree) – Commission on Accreditation in Physical Therapy Education
 Radiation Sciences
 Radiation Therapy Technology (bachelor's degree) – Joint Review Committee on Education in Radiologic Technology
 Radiography (associate's degree) – Joint Review Committee on Education in Radiologic Technology
 Nuclear Medicine Technology (bachelor's degree) – Joint Review Committee on Educational Programs in Nuclear Medicine Technology
 Rehabilitation Counseling – Council on Rehabilitation Education

School of the Arts

Arts (all visual arts degrees) – National Association of Schools of Art and Design
 Applied Music (bachelor's and master's degrees) – National Association of Schools of Music
 Interior Design (bachelor's degree) – Foundation for Interior Education Research

School of Business

Business and Accounting (all degrees) – American Assembly of Collegiate Schools of Business

School of Dentistry

Dental Hygiene (bachelor's degree), Dentistry (DDS) and Advanced Dental Education Programs including Endodontics, Oral and Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, General Practice Dentistry, Prosthodontics, Periodontics, and Advanced Education General Dentistry – Commission on Dental Accreditation

School of Education

Education (all degrees) – National Council of Accreditation for Teacher Education and the Virginia State Department of Education
 Recreation (bachelor's degree) – Council of Accreditation National Recreation and Parks Association/American Alliance of Leisure and Recreation

School of Medicine

Medicine (MD) – Liaison Committee on Medical Education
 Pathology (PhD) – Commission on Accreditation in Clinical Chemistry Post-Doctoral Residency Program in Medical and Public Health Laboratory Microbiology – American Academy of Microbiology
 Public Health (master's degree) – Council on Education in Public Health
 Human Genetics – American Board of Medical Genetics
 Microbiology and Immunology (master's and doctoral degrees) (with Pathology) – American Academy of Microbiology

School of Nursing

Nursing (bachelor's, master's, and doctoral degrees) – National League for Nursing and the Virginia Board of Nursing

School of Pharmacy

Pharmacy (bachelor's and PharmD degrees) – American Council on Pharmaceutical Education

School of Social Work

Social Work (BSW and MSW) – Commission on Accreditation of the Council on Social Work Education

Specialized Program Accreditation

Division of Student Affairs

University Counseling Services – American Psychological Association

Hospitals

MCV Hospitals – Joint Commission on Accreditation of Health Care Organizations

Campus Police

Police Academy – Virginia Department of Criminal Justice Services

University Centers and Institutes

Through the direction of the University Mission, VCU has implemented several University centers and institutes in effort to enhance research and educational opportunities. University centers are interdisciplinary and comprehensive programs organizing collaboration in teaching, research, service, and clinical and other training functions. These centers have significant external funding as well as a broad-based faculty involvement. All centers direct their efforts in meeting the overall mission of the University. University institutes also meet the general University Mission, involve a broad base of faculty, and earn a significant portion of funding from external sources. These institutes, however, are multidisciplinary, heavily research-oriented, and are linked to the Virginia Biotechnology Research Park.

University Centers

Liver Center

The Liver Center, currently in the process of development, has been created to unify the programs in clinical hepatology, liver transplantation, and basic science research of hepatic cell biology and metabolic function. In collaboration with these clinical and basic science departments of Virginia Commonwealth University, the center proposes to provide specialized care to children and adults with all types of liver and biliary tract diseases and to develop new clinical and basic research programs to compliment these clinical care activities. Their aim is to combine the efforts of a number of research laboratories and employ a wide variety of analytical, physiological, biochemical and molecular techniques in a single geographic location.

Under government, corporation, and foundation grants, various clinical investigators, clinicians, and basic scientists will collaborate their ideas and expertise to promote teaching and education of physicians, graduate and post-graduate students, and the community at large on the importance of prevention and therapy of liver disease. Their efforts also will be applied in further educating physicians in the Richmond and surrounding areas.

Massey Cancer Center

The Massey Cancer Center (MCC) is the National Cancer Institute (NCI) designated center at Virginia Commonwealth University. The center was established by the VCU Board of Visitors in 1972 as a result of the National Cancer Act.

Serving VCU as the focal point of cancer research, education, and health care delivery activities, MCC's programs encompass all schools on the Medical College of Virginia Campus as well as several departments on the Academic Campus. Nationally and internationally recognized scientists focus their study on the causes, prevention, and treatment of cancer. Their discoveries serve as the basis of several clinical trials, including analysis and production of genes, x-ray imaging of molecules, design of new anticancer drugs, and the analysis of the composition of normal and malignant cells using laser technology.

Community service and education is a high priority for the Massey Cancer Center. It has developed several programs and services to improve the assistance and education of the community. These programs include the center's specialized outpatient clinics at MCV Hospitals of Virginia Commonwealth University, the Rural Cancer Outreach Program, MCC's Cancer Rehabilitation and Continuing Care Program, the National Cancer Institute funded Cancer Information Service, and the Linen-Powell Resource Library.

For more information about the Massey Cancer Center and its programs, refer to its Web page at <http://views.vcu.edu/mcc>.

Neurosciences Center

VCU's Neurosciences Center is a nationally recognized center having expertise in clinical research and education as well as offering patients expert treatment for neurological and neurobehavioral disorders. The center is composed of the Departments of Neurology, Neurosurgery, Psychiatry, Physical Medicine and Rehabilitation, Anesthesia, Neuroradiology, Neuropathology, Biochemistry, Pharmacology, and the basic sciences.

Offering the only comprehensive facility in metropolitan Richmond, the center is able to meet its mission of high quality patient care, education, and research through its unique ability to establish and maintain a clinical, investigative, and training environment for residents and graduate studies in a core curriculum for neurosciences. The center also serves as a coalition of individuals and programs that offer expertise to physicians and patients throughout the surrounding community.

HIV/AIDS Center

The HIV/AIDS Center of VCU coordinates all HIV/AIDS related activities within the University and is

responsible for developing increased collaborative efforts related to HIV/AIDS between the University and the community. The center was created in 1993 as part of the strategic plan for the University and is administered through the Office of the Vice Provost for Health Sciences of VCU. Its mission is to improve the health and social condition of persons with the HIV infection and to prevent its spread through the means of education, research, and service.

As an extension of the AIDS Program of VCU/MCV established in 1986, the center offers multifaceted and interrelated programs composed of a rapidly expanding clinical program, a multidisciplinary program, and HIV antibody testing and counseling site, basic and clinical research programs, and significant involvement in policy development. In addition, the center has a history of collaboration with community-based AIDS Service Organizations, other care providers, and educators and researchers throughout the Richmond area, Virginia, and the nation.

Center for Environmental Studies

The Center for Environmental Studies (CES) was established in 1993 with the goal of creating an academic focus for the growing number of multidisciplinary initiatives in environmental studies at VCU. The center's objectives complement the broader University mission in teaching, research, and service by providing access to the full scope of technical, instructional, and supporting resources that are offered by a large research university. These resources range from one of the state's three major research libraries to a geographic information system (GIS) laboratory and extensive computing facilities.

However, the most important assets to CES are its faculty and staff. In each of their respective fields, these researchers and educators are recognized experts, contributing a collective network of knowledge to the center's interdisciplinary programs. These programs include ecological science research, environmental health assessment, environmental policy and planning, ecological risk assessment, and the development and application of emerging environmental technologies. In all of these areas, it is the faculty, staff, and students that emphasize the center's goal of focusing on the interplay between technology and contemporary environmental issues.

Center for Public Policy

The Center for Public Policy (CPP) was established on July 1, 1994 as an initiative of A Strategic Plan for the Future of Virginia Commonwealth University with the goal of focusing the University's multidisciplinary efforts in public policy. As a comprehensive, university-wide center, the CPP has responsibilities in each area of the University's broader missions: teaching, research, and public service.

The center houses and administers the newly established PhD program in public policy and administration; as well as, conducts basic and applied research on a number of public policy matters, with special attention to

health policy, urban and metropolitan development, state and local government, and politics. The newly developed program is designed to prepare students for roles concentrating in government, universities, research organizations, and other settings. The Survey and Evaluation Research Laboratory also contributes to the research and evaluation for the government, public and private non-profit agencies, the mass media, and VCU's faculty and administration. In addition, the center engages in significant service through its training programs, conferences, publications, and other contributions to public discourse.

Clinical Research Center for Periodontal Diseases

The Clinical Research Center for Periodontal Diseases was established in 1962 and is supported by the National Institute of Health. Through this NIH initiative, the federal government has continuously funded the center to support clinical investigation into the pathophysiology of human disease, and the testing of new methods for diagnosis and treatment of disease.

Serving as a link between basic research and clinical practice, the center concentrates its efforts in research, teaching and training, and collaborating researchers. Composed of four major components (biostatistics, human genetics, immunology, and bacterial genetics) the center serves as the research focus for periodontology at VCU.

University Institutes

Institute for Psychiatric and Behavioral Genetics

The Virginia Institute for Psychiatric and Behavioral Genetics was established in 1996 to facilitate the development of a multidisciplinary, integrated research program in the genetic epidemiology of psychiatric illness and human behavior and development. The institute offers collaborative support to a variety of VCU departments and programs as well as other universities, federal agencies, and industrial partners through funding provided by federal and private sources. The institute also provides ample educational opportunities for a variety of disciplines through seminars, workshops, classes, and clinical studies.

Institute for Structural Biology and Drug Discovery

Established in May 1997, the Institute for Structural Biology and Drug Discovery serves as a link between two distinct disciplines, structural biology and drug design, to create one medicinal field. This field facilitates new, innovative research and scholarship in this collaborative discipline. Through multidisciplinary efforts among its faculty and clinicians, the institute combines structural molecular biology and medicinal chemistry to develop an educational component that prepares post-doctoral fellows and graduate students for the emerging area of structural molecular biology by moving beyond traditional disciplinary constraints.

Institute for Clinical Trials

The Institute for Clinical Trials at VCU is the testing ground for a wide variety of clinical studies performed by the pharmaceutical industry. The institute also will provide multidisciplinary educational opportunities in clinical research. Through a collaborative network of faculty from the Schools of Medicine and Pharmacy, the institute will conduct organized clinical trials research on a centralized basis.

Institute for Outcomes Research

Formed and led by a collaboration of faculty in the Schools of Medicine, Allied Health Professions, Nursing, and the MCV Hospitals Authority, The Institute for Outcomes Research is one of the first centers in the country to be organized to foster and support outcomes and quality health care research an academic medical center. This institute is designed to offer an academic structure within which talented individuals with complimentary disciplines can work in concert to design the elements of high quality clinical care with the utilization of resources. Such elements will concern patient flow for ambulatory care, patient satisfaction, use of the health care system, and evaluation of treatment and therapy.

Institute for Oral and Craniofacial Molecular Biology

The mission of the Institute for Oral and Craniofacial Molecular Biology is to establish itself as a matrix structure within the University, drawing on expertise from multiple departments and units on the Medical College of Virginia Campus. This institute will be funded by the National Institute of Health.

Scientists and clinician scientists' multidisciplinary research catalyze translational projects leading to conceptual biological foundations that incorporate genetics, development, evolution, population and behavioral and social studies. The institute provides training opportunities for predoctoral and postgraduate trainees that will facilitate the crystallization of a research program centered on oral and craniofacial molecular biology. This institute will facilitate the collaboration of expert ideas through the use of seminars, journal clubs, and continuing education programs.

Institute for Drug and Alcohol Studies

In the Fall of 1993, the President and Board of Visitors of Virginia Commonwealth University established a new University Center for Drug and Alcohol Studies. However, with its commitment to promote excellence in drug abuse scholarship and to provide a significant level of new funding for growth, the center was elevated to the status of an institute.

The goals of the institute match those of the University Mission. Through multidisciplinary research in basic and applied science, the institute strives to enhance research and scholarship on drug and alcohol problems. The institute maintains VCU's goal to serve the community by providing the latest advances in drug-

related treatment and prevention strategies. The services provided by the outreach programs create an opportunity for VCU to serve as the federally funded regional center for training drug abuse treatment professionals for certification and licensure.

A P P E N D I X

F

AP Credit

CEEB Advanced Placement Exams Accepted at VCU

Qualified students who have taken college-level work in a secondary school may receive academic credit and/or advanced placement. Examinations which determine advanced placement are the Advanced Placement Tests of the College Entrance Examination Board. AP grades of 3, 4, or 5 will be awarded from three to ten semester credits per AP test, depending on the subject area. Final determination of credit will be made after test results have been received by the Dean's Office in the College of Humanities and Sciences and have been evaluated by the University. Accepted credits are counted as credits earned toward the degree, but are not used in the computation of the student's VCU grade-point average.

AP Examination	Score	Credit Awarded	VCU Equivalent
American History	5,4,3	6	HIS 103, 104
Art History	5,4	8	AFO 105, 106 (AFO majors)
Art History	5,4	6	ARH 103, 104 (other majors)
Art History	3	4	AFO 105 (AFO majors)
Art History	3	3	ARH 103 (other majors)
Computer Science AB	5,4	6	CSC 255, 256
Computer Science AB	3	3	CSC 255
Computer Science A	5,4	3	CSC 255
Economics - Macro	5,4	3	ECO 211
Economics - Micro	5,4	3	ECO 210
European History	5,4,3	6	HIS 101, 102
General Biology	5	8	BIO 151, L151, BIO 152, L152
General Biology	4	4	BIO 152, L152
General Biology	3	4	BIO 101, L101
General Chemistry	5	10	CHE 101, L101, 102, L102
General Chemistry	4,3	5	CHE 101, L101
Govt. & Pol/American	5,4,3	3	POS 103
Govt. & Pol/Cmpprt.	5,4,3	3	Political Science Elective
Language/Comp.	5,4,3	3	ENG 101
Language – FRE, GER, SPA	5	6	300, 301
Language – FRE, GER, SPA	4	3	300
Language – FRE, GER, SPA	3	3	202
Latin: Catullus/Horace	5,4,3	3	LAT 302
Latin: Vergil	5,4,3	3	LAT 302
Literature/Comp	5,4,3	3	ENG 101
Literature – FRE, GER, SPA	5	6	330, 331
Literature – FRE, GER, SPA	4	3	330
Literature – FRE, GER, SPA	3	3	202
Math Calculus AB	5,4,3	4	MAT 200
Math Calculus BC	5	8	MAT 200, 201
Math Calculus BC	4,3	4	MAT 200
Physics B	5	8	PHY 201, L201, 202, L202
Physics B	4,3	4	PHY 201, L201
Physics C - Mech.	5,4,3	5	PHY 207, L207
Physics C - E & Mag.	5,4	5	PHY 208, L208
Psychology	5,4,3	4	PSY 101
Statistics	5,4,3	3	STA 208 or 210

Transfer Module

Virginia Commonwealth University subscribes to the Transfer Module. Students transferring to VCU with “C” grades or better in any of the courses listed below can be assured that they will be accepted as equivalent to the specified VCU courses or as electives, with the exceptions shown in the footnote. See the specific program listing in the *VCU Transfer Guide* for courses needed to complete general education requirements. GE = general education requirements, FE = free elective, NC = no credit.

Students completing the Transfer Module will receive 35 credits.

VCCS Courses

VCU Equivalent

English (6 credit hours)

ENG 111-112 College Composition

GE ENG 101 and literature elective*

* If student transfers with the associate degree, ENG 112 will transfer as the equivalent of ENG 200 Composition and Rhetoric.

Humanities (6 credit hours)

ART 101, 102 History and Appreciation of Art
 MUS 121, 122 Music Appreciation
 ENG 241, 242 Survey of American Literature
 ENG 243, 244 Survey of English Literature
 ENG 251, 252 Survey of World Literature
 HUM 201, 202 Survey of Western Culture
 PHI 101, 102 Introduction to Philosophy
 PHI 211, 212 History of Western Philosophy

GE ARH 103-104 Survey of Western Art
 GE Humanities elective
 GE ENG 205-206 American Literature
 GE ENG 203-204 British Literature
 GE ENG 201-202 Western World Literature
 GE Humanities elective
 GE Humanities elective
 GE PHI 103 Ancient Greek and Medieval Philosophy
 PHI 104 Modern Western Philosophy

Note: Studio courses in the Fine Arts are excluded from the transfer module, but may be acceptable at the institution of the student's choice.

Social Science (6 credit hours)

ECO 201, 202 Principles of Economics
 GEO 221, 222 Regions of the World
 PLS 211, 212 U.S. Government
 PLS 241, 242 International Relations
 PSY 201, 202 Introduction to Psychology
 PSY 231, 232 Life Span Human Development
 SOC 201, 202 Introduction to Sociology
 SOC 211, 212 Principles of Anthropology

GE ECO 211 (Macro) ECO 210 (Micro) Principles of Economics
 GE GEO 307, 308 World Regions
 GE POS 103 U.S. Government plus 3 elective credits
 GE POS 105 International Relations plus 3 elective credits
 GE PSY 101 Introduction to Psychology plus 3 elective credits
 FE Social science electives
 GE SOC 101 General Sociology plus 3 elective credits¹
 GE ANT 103 Cultural Anthropology plus 3 elective credits¹

Science (8 credit hours in one sequence, including lab)

BIO 101-102 General Biology
 BIO 231-232 Human Anatomy and Physiology

GE BIO 101, L101 Life Science and 4 science elective credits
 FE BIO 205 Basic Human Anatomy and

CHM 101-102 General Chemistry	GE	BIO 206 Human Physiology No direct equivalent (Pre-Nursing students may present these courses) ²
CHM 111-112 College Chemistry	GE	CHE 101, L101, 102, L102 General Chemistry
CHM 113-114 University Chemistry (10 cr. hrs.)	GE	CHE 101, L101, 102, L102 General Chemistry
PHY 101-102 Introduction of Physics	GE	No direct equivalent ²
PHY 201-202 General College Physics	GE	PHY 201-202 General Physics
GOL 105-106 Physical and Historical Geology	GE	PHY 105, L105 Physical Geology and Laboratory and 4 credit science course. No direct equivalent for GOL 106 ²
Or the combination of GOL 105 Physical Geology with NAS 130 Elements of Astronomy	GE	PHY 105, L105 Physical Geology and Laboratory
	GE	PHY 103, L103 Elementary Astronomy and Laboratory (This combination does not fulfill the laboratory science requirement for Humanities and Sciences majors)
History (6 credit hours)		
HIS 101-102 History of Western Civilization	GE	HIS 101, 102 Survey of European History
HIS 111-112 History of World Civilization	GE	HIS 101, 102 Survey of European History
HIS 121-122 U.S. History	GE	HIS 103, 104 Survey of American History
Math (3 credit hours)		
MTH 151 Mathematics for the Liberal Arts I	NC	No direct equivalent, no credit ³
MTH 163 Precalculus I	GE	MAT 141 Algebra with Applications
MTH 166 Precalculus with Trigonometry	GE	MAT 151 Precalculus Mathematics
MTH 173 Calculus with Analytic Geometry I	GE	MAT 200 Calculus
MTH 175 Calculus of One Variable I		No direct equivalent, with MTH 176 equivalent to MAT 200 Calculus
MTH 181 Finite Mathematics I	NC	No direct equivalent, no credit ³
MTH 240 Statistics	GE	STA 208 Statistical Thinking or STA 210 Basic Practice of Statistics
MTH 241 Statistics I	GE	STA 208 Statistical Thinking or STA 210 Basic Practice of Statistics
MTH 270 Applied Calculus	GE	BUS/MAT 112 Elements of Calculus for the Behavioral, Social and Management Sciences
MTH 271 Applied Calculus I	GE	BUS/MAT 112 Elements of Calculus for the Behavioral, Social and Management Sciences
MTH 273 Calculus I	GE	MAT 200 Calculus
VCCS MTH courses offered prior to Fall 1994:		
MTH 161 College Algebra and Trigonometry	GE	MAT 151 Precalculus Mathematics
MTH 165 College Algebra	GE	MAT 141 Algebra with Applications
MTH 171 Pre-Calculus Mathematics I	GE	MAT 141 Algebra with Applications

¹ For PSY, SOC or ANT majors, the three elective credits (PSY 202 or SOC 202 or SOC 212) may not apply to the major, but will count as free electives toward the degree.

² No direct equivalent, but fulfills laboratory science requirement for all majors, **except** MAS, CSC, BIO, CHE, PHY, SLW, PSY, the pre-health science programs and engineering majors.

³ When combined with MTH 152 or MTH 182, the courses may be used as a prerequisite for STA 208 or 210.

Index of Faculty

Aaron, Robert	39	Averch, Timothy D.	340	Benson, William H.	329
Abay-Asmerom, Ghidewon	114	Ayele, Hanna	325	Bentley, Jack K.	337
Abbey, Linda J.	325	Ayres, Stephen M.	323, 335	Bentley, Kia J.	365
Abbey, Louis M.	253, 330	Bae, Benjamin B.	226	Benton, John E.	339
Abbott, David M.	254	Bagwell, Charles E.	331, 339	Bentt, Deyne R.	319
Abbott, Lynn D., Jr.	320	Bailey, James	276	Berger, Brian E.	319
Abd-Elfattah, Anwar S.	321, 333, 339	Bailey, Kent G.	134	Berglund, John F.	61, 114
Abood, Mary E.	333	Baines, Edward F.	319	Berman, Wallace F.	332
Abraham, Donald	319, 357	Balkissoon, Avinash R.A.	337	Berry, Boyd M.	93
Abraham, Isaac	347	Ballentine, Rollin L.	359	Berry, Sam G.	228
Abubaker, A. Omar	253, 338	Ballinger, Debra A.	260	Best, Al M., III	335
Accordino, John J.	146	Balster, Robert L.	333	Betzhold, William C.	252
Aceto, Mario D.	333	Bampton, Betsy A.	347	Beverly, David P.	365
Ackley, R. Jon	230	Bandak, Abdalla Z.	339	Bevilaqua, William Otto	193
Adams, Ruma G.	325	Banks, Manley Elliott	130	Beyer, Jeffrey W.	253
Adelaar, Robert S.	329	Banks, W. L.	338	Biber, Margaret C.	334
Adena, Tilahun	320, 334	Banks, William L.	334	Biber, Thomas L.	334
Adkins, Julian	335	Banks, William L., Jr.	320	Bick, Donald A.	206
Adler, Robert A.	325	Bar-on, Miriam E.	321, 332	Bieberich, Erhard	320
Adler, Stuart P.	327, 332	Baranoff, Etti	227	Bigbee, John W.	318
Aggen, Steven H.	335	Barber, Alice	365	Bigelow, Alden G.	107
Aghdami, Aliasghar	319	Barbour, Suzanne E.	327	Biggerstaff, Marilyn A.	365
Aiken, Peter H.	228	Barker, Randolph T.	230	Bilyeu, Francile	206
Akkuratova, Alexandra	324	Barker, Sandra B.	319, 323, 336	Bilyeu, Landon A.	206
Akosah, Kwame	324	Barker, Thomas C.	166, 334	Bishop, Marilyn F.	127
Al-Mateen, Cheryl S.	331, 336	Barnes, John A.	115	Black, George W.	218
Al-Mateen, Kevin Bakeer	328, 332	Barnes, Robert F., Jr.	252	Blake, William E., Jr.	107
Albanese, Jay S.	90	Barnes, Thomas Y.	320	Blank, Allan	206
Albanna, Suzanne E.	321	Barr, William H.	359	Blanks, Edwin E.	229, 377
Alder, Nora	268	Barrell, Lorna K.M.	347	Blanton, Wyndham B., Jr.	323
Aldhizer, Theodore G.	325	Barry, Daniel P.	339	Blatecky, John J.	335
Ali, M. Karim	330	Barsanti, John M.	319	Blaylock, W. Kenneth	321
Alimard, Amin	130	Baskett, Sarah	335	Bleick, Charles F.	185
Allen, Chequeta D.	323	Baski, Alison A.	127, 293	Blem, Charles R.	82, 153
Allen, Robert C.	329, 333	Baskind, Frank R.	365, 380	Blem, Leann B.	82, 153, 154, 157
Allison, Kevin Wendell	134	Bates, Sean L.	301	Blinder, Russell A.	338
Allison, Marvin J.	330	Batty, L. Wayne	206	Blum, Joel A.	335
Allison, Matthew C.	337	Bauer, David F.	114	Board, John A.	329
Ames, James E., IV	114	Baughan, Linda W.	252	Bobbitt, Katherine C.	347
Anderson, Frank P.	330	Baumgarten, Clive Marc	334	Bodurtha, Joann N.	322, 328, 331
Anderson, Lisa S.	334	Beale, Andrew V.	275	Bogler, Oliver	318, 338
Anderson, Thomas F.	329	Beall, Larry G.	227	Bolduan, Ruth M.	214
Andrako, John	358	Beall, Martin	37	Boling, Peter A.	325
Andrews, Robert L.	230	Bear, Harry D.	339	Boling, Susan Ivie	37
Ansello, Edward F.	165	Beardsley, Patrick M.	333	Booker, Corliss V.	321
Apgar, Nickolas	193	Bechard, D E.	326	Boon, Franklin L.	336
Arancibia, Carlos U.	319	Beck, David A.	254	Boothby, John R.	301
Archer, Gordon L.	326	Beck, William J.	101	Boots, Marvin R.	358
Ariga, Toshio	319	Becker, Elmore	325	Boraks, Nancy E.	268
Armour, Robert A.	93	Becker, Joanne L.	330	Borberg, Victor E.	320
Arnfield, Mark Robert	337	Beckett, Joyce O.	365	Borden, George	260
Arnold, Edmund C.	76	Béjar, Manuel	101	Borgard, John H.	65, 378
Arrowood, James A.	324	Belgrave, Faye Z.	134	Borzelleca, Joseph F.	333
Arthur, Douglas W.	337	Bell, Carmen	31	Borzelleca, Joseph F., Jr.	328
Astruc, Juan A.	318, 328	Bell, Dewey H., Jr.	254	Bosch, Herman A.	337
Atri, Padmini B.	335	Bell, Patricia E.	325	Bosher, Lewis H., Jr.	338
Auerbach, Stephen M.	134	Bell, Zakia D.	328	Bost, William	276
Auletta, Ann G.	337	Belloni, Frank P.	131	Bostic, Alexander	192
Austin I. Mehrof, Jr.	339	Ben-Ezra, Jonathan	330	Boudreau, Nancy	318
Austin, Raymond F., Jr.	337	Bendersky, Joseph W.	107	Bovbjerg, Victor E.	326
Austin, Terry L.	206	Benedict, Stanley H.	337	Bowles, Donald H.	232

Bowlin, Gary Lee	288	Camp, Norman M.	336	Colello, Raymond J.	318
Bowman, Edward R.	333	Campbell, B. Jewett	214	Coleman, Earle J.	123
Bowman, John H.	92, 227	Campbell, Eleanor D.	320	Coleman, George C.	321
Boyan, Charles Paul	319	Campbell, John W., Jr.	76	Coleman, Philip H.	327
Boykin, James H.	227	Campbell, Kenneth	218	Colley, J. David	192
Boyle, Anne H.	345	Campbell, Robert L.	250, 253, 338	Collins, James M.	320
Boyle, Joseph R.	268	Campbell, William W., Jr.	328	Collins, Judith B.	329, 347
Boyle, Russell M.	320	Canavos, George C.	230	Collins, L. Victor	39
Bradley, S. Gaylen	327	Cannan, Charles R.	324	Compton, Amelia D.	335
Brandt, Richard B.	320	Cardea, John A.	329	Comstock, Thomas J.	323, 359
Brannen, Judy Lynn	325	Cardinale, Robert M.	337	Condit, Deirdre M.	130
Brasfield, Kenneth H., Jr.	359	Carlisle, John A.	127, 293	Connelly, Kevin P.	332
Brath, Lisa K.	326	Carlotti, Debra	268	Connors, Wayne	323, 335
Braudrick, Larry W.	330	Carlyon, Richard N.	193	Conrad, Daniel H.	327
Bremer, David M.	216	Carney, Marcia D.	329	Contos, Melissa J.	331
Brennen, Bonnie S.	76	Carpenter, Edward M.	365	Conway, Carolyn M.	82, 153
Bressler, Joy G.	35	Carr, James B.	329	Cook-Tench, Diane M.	76
Brewer, William H.	337	Carr, Marcus	330	Cooke, William H.	324
Briceland, Alan V.	107	Carr, Marcus E.	323	Cooper, Catherine L.	319
Briggs, F. Norman	334	Carr, Marcus, Jr.	326	Cooper, Elizabeth J.	93
Brilliant, Susan S.	115	Carrier, Loran F.	206	Cooper, Kevin R.	326, 334
Brink, Douglas D.	323	Carroll, Norman V.	359	Cooper, Patricia S.	325
Brinson, Elizabeth	334	Carter, Robert C.	192	Copeland, Marcia A.	319
Britt, Gena Covell	327, 335	Carter, Walter H.	323	Copolillo, Albert	166
Brittain, Mary	269	Carter, Walter H., Jr.	320	Coppedge, Walter R.	93
Broadus, William C.	339	Casey, Thomas H.	338	Coppins, Richard J.	229
Brock, Ellen L.	328	Cash, Sandra H.	166	Corazzini, John G.	35
Broga, Dean W.	320, 337	Caskey, Kristin A.	202	Corey, Linda A.	322
Bromley, David G.	140	Cauley, Kathleen M.	275	Corley, Karl C.	334
Brookman, Richard R.	331	Centrella, Nancy A.	374	Corley, Mary C.	347
Brooks, Carol N.	247, 252	Chan, James C.	320, 332	Cornis-Pop, Marcel	93
Brooks, Christopher A.	80, 206	Chandler, Anne L.	61, 177	Corretier-Arzuaga, Gustavo	335
Brooks, James W.	339	Chandler, Leonard	338	Corrie, W. Stephen	328
Brooks, Michael P.	146	Chapman, Jennifer	37	Corwin, Frank D.	338
Brophy, Donald	359	Charles-Craft, Ann	171	Costanzo, Linda S.	334
Browder, Laura	93	Chase, Allyn	44	Costanzo, Richard M.	328, 330, 334
Brown, Bonnie L.	82, 156	Chatterji, Anil	293	Cotter, John J.	326
Brown, Darrell R.	230	Cheng, Chao-Kun	115	Cotzias, Constantin G.	76
Brown, Henrietta	32	Chessin, Laura	192	Coudron, Philip E.	330
Brown, Judith A.	322	Chin, Amita Goyal	229	Coulter, Douglas A.	318, 328, 333, 334
Brown, R. McKenna	101	Chinnici, Joseph P.	82, 156	Cowles, Deborah L.	232
Brownell, Charles	187	Chlebowski, Jan F.	301, 320, 379	Cowley, Michael J.	324
Brownstein, Marshall P.	243, 254, 378	Choi, Sung C.	320, 338	Cowling, W. Richard, III	341, 347, 379
Bruzese, Joseph D.	325	Christenbury, Leila	268	Cox, A. Leavelle	365
Bryan, Daphne L.	321	Christian, Frances M.	336	Cox, James F.	324
Bryan, John T.	179	Christie, Gail Ellen	327	Crabtree, Donald G.	254
Bryant, Shirley A.	365	Chuidian, Frances X.	321	Craig, Shirely	318
Bryson, Noel	229	Chumley, Timothy H.	76	Cramer, Elizabeth P.	365
Buck, Gregory A.	327	Churchill, Frank E., Jr.	336	Crandall, Sonia J. S.	359
Buckley, Lenore M.	326, 331	Churn, Severn B.	328	Craver, Samuel M.	275
Bulik, Cynthia M.	335	Cifu, David X.	333	Crawley, Charlene D.	87
Bullock, M. Ross	319, 339	Cisek, James E.	321	Creehan, M. Suzanne	339
Bumgardner, James A.	214	Clark, Gordon Wayne	114	Cregger, Barton B.	293
Burgett, Amy E.	321	Clark, Jean	41	Creighton-Zollar, Ann A.	80, 140
Burke, Thomas C.	243, 247, 378	Clark, Ralph R., III	301, 325, 379	Cromey, Robert D.	107
Burks, Robert Tucker	331	Clarke, Bernadine A.	347	Croteau, David R.	140
Burmeister, John A.	254	Clarke, Margaret P.	333	Crouch, Michael A.	359
Burnette, Derek M.	333	Cleary, Stephen F.	334	Crowder, Dorothy S.	347
Burns, David R.	249, 254	Clement, Delores G.	160, 166, 378	Crowe, Ann G.	187
Burns, James C.	253, 330	Clement, Jan P.	166	Crummette, Beauty D.	347
Burns, Shelley Olds	332	Clement, Mary J.	90	Crutchfield, George T.	76
Burnside, Chris	199	Clemo, Frances L. W.	325	Crute, Stephen L.	339
Burton, David E.	185	Clemo, Simon Henry	324, 334	Culbert, James P.	319, 336
Bush, Francis M.	252	Clifton, Robert L.	31	Cull, John G.	177
Bushway, Collin	230	Climo, Michael W.	326	Cullen, Benjamin T., Jr.	166
Butler, James H.	254	Clore, John N.	320, 325	Curtis, Martha	199
Button, Gilbert L.	252	Coaker, Jean S.	359	Cutler, S. James	330
Buzzard, I. Marilyn	327, 334	Coffey, James P.	254	Dahlke, H. Otto	365
Byles, Charles M.	230	Coffman, Edward N.	226	Dalton, Amy H.	227
Byrd, Donna G.	230	Cohen, Brian K.	321	Damaj, M. Imad	333
Byron, Peter R.	359	Cohen, I. Kelman	339	Damiano, Thomas R.	337
Cabral, Francine M.	327	Cohen, Robert	336	Dance, Daryl C.	93
Cabral, Guy Anthony	327	Cohen, Stephen A.	328	Dance, Mario E.	333
Cain, Marlyne G.	171	Cole, Debra E.	336	Daniels, Kenneth N.	227
Calabrese, Vincent P.	328	Cole, Sabra O.	325	Danish, Steven J.	134, 334
Califano, Joseph V.	254	Cole, Timothy J.	337	Dattalo, Patrick V.	365

Daughtrey, William H., Jr.	232	Dunn, Nancy L.	332	Festa, Laura Meeks	347
Davenport, James M.	115	Dunwiddie, Walter C.	319	Feuer, Stanley J.	335
Davis, Douglas D.	227	Duran-Guerraty, Maria A.	326	Field, Jerry J.	204
Davis, King E.	365	Duvall, William H.	31	Fierro, Marcella F.	327
Davis, Michael D.	268	Dvorak, Paul F.	101	Fillmore, Dorothy E.	371,372
Davis, Robert G.	260	Earley, Donald T.	192	Fine, Michael L.	82
Day, Benjamin R., II	192	Eastman, Allan A.	197	Fine, Richard A.	82,93
Day, Melanie Kohn	206	Eaves, Lindon J.	322,335	Finto, Kevin J.	296
Dayhoff, John D.	43,377	Eckberg, Dwain L.	324,334	Finucane, Sheryl G.	171
Decker, Michael J.	333,338	Edelson, Mary Bernardi	328,332	Fischer, Carl R.	377
DeGenaro, Guy J.	230	Edmond, Michael B.	326	Fisher, Bernard J.	326
DeHaven, Thomas	93	Edmunds, Wayne L.	226	Fisher, Evelyn J.	326
Delafuente, Jeffrey C.	359	Edwards, Aileen A.	301	Fisher, Lyman M.	330
DeLellis, Anthony J.	341, 347, 379	Edwards, Clifford W.	123	Fisher, Mary Ruth	340
DeLorenzo, Robert J.	320,328	Edwards, Leslie E.	334	Fisher, Robert	153,331
DeMao, John	192	Edwards, Richard W.	326	Fisher, Robert W., Jr.	82
DeMaria, Eric J.	339	Edwards, Virginia L.	324	Fiske, Russell H.	360
Demeo, Jonathan H.	337	Egelhoff, William F.	165	Flethood, Arnold	269
Dent, C. Daniel	249	Eggleston, William B.	82	Flowers, Ann N.	330
Dent, Paul	333	Egle, John L., Jr.	333	Floyd, Harold L.	337
Dent, Paul	337	Eissenberg, Thomas E.	134,323	Foley, Debra L.	322
Derco, Keith A.	321,332	El-Shall, M. Samy	87,291	Fonoroff, Allen	146
Dery, Adrienne	333	Ellenbogen, Kenneth A.	324,338	Ford, Barbara	45
Desai, Umesh R.	357	Elliott, Greg	37	Ford, George D.	334,359
Desch, Christopher E.	326,327	Elliott, Gregory R.	332	Ford-Smith, Cheryl D.	171
Deschenes, Jennifer L.	301	Elliott, Sherry C.	337	Formica, Joseph V.	327
DeSimone, John A.	334	Ellis, Anthony J.	123	Forsyth, Donelson R.	134
DeSmith, Thomas H.	179, 214, 378	Ellis, Cynthia R.	332,335	Foster, Francis M.	252
Deveney, James K.	114	Ellis, Earl F.	338	Foster, Harriet H.	325
Devlin, Joseph	93	Ellis, Earl F., Jr.	333	Foster, Robert L.	192
Dewey, William L.	333,377	Ellison, Jay W.	331	Foster, Robin L.	321,332
Diana, Lewis	141	Elswick, Ronald K.	320	Fowler, Alpha A.	326
Diegelmann, Robert F.	320,339	Ely, Vivien	276	Fox, Jill E.	268
Diehl, Tom	37	Embrey, James P.	166	Foxx-Orenstein, Amy	325
Diener, Randy M.	338	Embrey, Richard P.	331,339	Frable, Mary A.	330
Digiovanni, Susan R.	326	Engel, Arthur J.	107	Frable, William J.	331
Dilworth, Robert L.	275	England, Marshall C., Jr.	253	Fragneto, Regina Y.	319
Dinardo, Laurence J.	330	Epps, Ruth W.	226	Francis, Gloria M.	347
Dinsmoor, Mara J.	328	Erickson, Marilyn T.	134	Franck, Kathleen Ann	192
Dintiman, George B.	260	Erickson, Maurice L.	218	Frank, Tawni	336
Dinunzio, Gina B.	319	Erickson, Wayne D.	291	Frankel, Nicholas	93
Dishman, Michael V.	252	Evans, Timothy C.	321	Franks, David J.	140
Dittrich, Melissa S.	331	Evans, Toni I.	326	Franson, Richard C.	320
Dodds, R. Neil	253	Everett, John O.	226	Franzak, Frank J.	232
Dolan, Julie A.	130	Everette, Lucinda L.	319,331	Fratkin, Melvin J.	323,338
Dolan, Margaret A.	321,332	Exley, Ethelyn, E.	346	Frechen, Kathleen A.	335
Domnisse, Durwood C.	192	Exum, Barbara J.	359	Freed, David C.	214
Donald, Ranita R.	319	Fabelo, Humberto E.	365	Freeman, Howard K.	337
Donato, Gerald M.	214	Fabiato, Alexandre	334	Freer, Richard J.	320
Donnell, Cynthia S.	206	Fahey, William	336	Freer, Steven D.	325
Donofrio, Mary T.	332	Fairholm, Gilbert W.	131	Freude, Kenneth A.	330
Donohue, Thomas R.	76	Fairman, R. Paul	326	Friedman, Richard B.	338
Donovan, Gregory E.	93	Falck, Hans S.	365	Fries, Elizabeth A.	134
Dougherty, Linda M.	165	Fallacaro, Michael D.	166	Fuhs, F. Paul	229
Douglas, Hugh B., Jr.	254	Fallen, Nancy	269	Fulcher, Ann S.	337
Downs, Robert W.	325	Farley, Reuben W.	114	Fuller, Kathryn H.	107
Doyle, Nancy L.	336	Farmer, David J.	130	Galaska, Piotr N.	321
Drain, Cecil B.	160, 166, 378	Farmer, James D.	187	Gallagher, Charles J.	223,233,378
Drake, W. Avon	130	Farmer, Rosemary L.	365	Gallagher, Suzanne	227
Draper, David A.	332	Farrar, John T.	323	Gander, G. William	330
Drewnowska, Krystyna	326	Farrell, Albert D.	134	Gandy, Gerald L.	177
Droter, Lisa G.	338	Farrell, Nicholas P.	87	Gao, Bin	333
Drought, Michael H.	214	Farrington, Frank H.	254	Gao, Chaoyi	204
Dubofsky, David A.	227	Fatouros, Panos P.	338	Garcia, Margot W.	146
Dudley, Barbara	331	Fauber, Terri L.	172	Gardner, Charles	335
Dukat, Malgorzata	357	Faulkner, Ken A.	171	Gardner, David F.	325
Duke, Debra Ann	301	Fauri, David P.	365	Garman, Gregory C.	82
Duke, Elizabeth A.	93	Feher, Joseph J.	334	Garmon, Pamela W.	337
Duke, J. Maurice	93	Fei, Ding-Yu	288	Garner, Howard G.	268
Dunbar, Jana G.	339	Felton, Warren L.	329	Garnett, William R.	328,359
Duncan, Jack	276	Fenn, John B.	87, 291	Garrett, Algin B.	338
Duncan, Patricia H.	268	Ferguson, Clinton S.	227	Garrett, Algin B.	321
Dungee-Anderson, Elizabeth D.	365	Ferguson, Jerry T.	227	Garrett, Allen R.	319
Dunn, Clarence L.	226	Fernandez, Antony	335	Garrett, Carleton T.	331
Dunn, Leo J.	329	Ferreira-Gonzalez, Andrea	331	Gary, Judy S.	321
Dunn, Melinda M.	337	Festa, Daniel K.	171	Gary, Sheldon	374

- Gasen, Jean B. 229
 Gates, James E. 82
 Gayle, Richard C. 260
 Geary, David P. 90
 Geeraets, Ragnit E. 318
 Gehr, Lynne C. 319
 Gehr, Todd W. B. 326
 Gehring, Donald C. J. 377
 Gennings, Chris 320
 Gerber, Paul J. 268, 275, 335
 Gerszten, Enrique 330
 Getty, Deborah 260
 Gewirtz, David A. 323, 333
 Ghatak, Nitya R. 331
 Ghosh, Shobha 320
 Giacobbe, George A. 268
 Gianola, Katherine 325
 Giglio, James A. 253, 338
 Gil, Gregorio 320
 Gilbreath, Glenn H. 230
 Gill, Edward J. 328
 Gill, Ranjodh Singh 325
 Gillon, Richard D. 172
 Gilson, Stephen F. 365
 Ginder, Gordon Dean 326, 327
 Girerd, Philippe H. 328
 Glauser, Frederick 326
 Gleason, William M. 301, 379
 Glenn, Margaret K. 177
 Glennon, Richard A. 357
 Godin, Michael S. 330
 Godkin, Robin R. 340
 Godwin-Jones, Robert A. 101
 Goldberg, Stephen J. 318, 334
 Golden, B. Marita 93
 Goldman, I. David 323
 Goldschalk, Michael F. 325
 Gonzalez, Edgar R. 321, 323, 359
 Gonzalez, Michael S. 321
 Gonzalez, Stephanie M. 321
 Goode, Jean-Venable R. 359
 Goodwin, Margarette C. 301
 Goplerud, Dean R. 329
 Gordon, Jill A. 90
 Gorham, Adrian 359
 Gottfredson, Stephen D. 65, 377
 Goudreau, Evelyne 324
 Gould, James H. 339
 Gowdy, Robert H. 127
 Gower, Ann Renee 214
 Graham, A. Stephens 338
 Graham, Martin F. 320, 332
 Gramling, Sandra E. 134
 Grant, Steven 326, 327, 333
 Grap, Mary Jo E. 346
 Grassadonia, Jane 37
 Gray, Elizabeth S. 359
 Gray, George R. 230
 Gray, Patricia T. 345
 Green, James H. 333
 Green, Robert G. 365
 Greer, Harold E., Jr. 107
 Grider, John R. 323, 334
 Griffin, Claudius W. 93
 Griffith, Frank A. 359
 Griggs, Walter S., Jr. 223, 232, 378
 Grimes, Margaret M. 331
 Grogan, William McLean, Jr. 320
 Groman, William D. 135
 Grosenick, Leigh E. 130
 Gross, Ena 268
 Gross, Paul A. 166
 Groves, Barney R. 260
 Gudas, Stephen A. 333
 Guerard, Sandra L. 206
 Guerraty, Albert J. 339
 Guerry, DuPont, III 329
 Gulak, Morton B. 146
 Gullquist, Scott D. 332
 Gunter, Ben D. 204
 Gurnick, Dolores A. 334
 Gutcher, Gary R. 328, 332
 Guthmiller, John 206
 Guthrie, Karen M. 202
 Gutterman-Cornell, Valerie E. 325
 Guttu, Arnold L. 338
 Haar, Jack L. 299, 318, 379
 Haas, Thomas W. 283, 296, 378
 Hackler, Robert H. 340
 Hackney, Mary Helen 326
 Hadfield, M. Gary 331
 Hagan, Betsy A. 243, 252, 378
 Hague, James L. 90, 157, 233
 Hahn, Chin-Lo 252
 Halasz, Thomas J. 34
 Hall, Thomas O., Jr. 123
 Haller, Deborah L. 319, 323, 336
 Ham, John M. 340
 Ham, William T, Jr. 334
 Hambrick, Ralph S. 130
 Hamilton, Dorothy Tennent 204
 Hamm, Robert J. 134
 Hammel, Bruce 206
 Hammersley, William S. 197
 Hampton, Carol L. 301, 379
 Hanna, Aura 134
 Hanna, Diane L. 324
 Hansen, Lea Ann 359
 Harbison, John William 328
 Hard, Richard C., Jr. 330
 Hardigan, Eileen O. 328
 Hardigan, James E. 243, 253, 378
 Hardy, Richard E. 177
 Harkins, Stephen W. 165, 335
 Harkness, Marguerite 93
 Harless, David W. 227
 Harrigan, Marcia P. 365
 Harrington, Walter G. 252
 Harris, Grace E. 377
 Harris, James S. 321
 Harris, Louis S. 333
 Harris, Paul A. 325
 Harris, Thomas M. 318
 Harrison, William B., III 227
 Hart, Robert P. 336
 Hartland, William, Jr. 166
 Hartnett, John J. 134, 153
 Hartsoe, Charles E. 260
 Hartwell, Gary R. 247, 252
 Harvey, Stephen C. 160, 378
 Harvie, Lucy M. 357
 Harwood, M. Buie 204
 Hasenstab, Mary S. 330
 Hastillo, Andrea 324
 Haver, William E. 114
 Hawkridge, Fred M. 87
 Hawthorne, John D. 197
 Hayes, Curtis W. 329, 337
 Haynes, Boyd W., Jr. 338
 Haynes, Jeffrey H. 331, 339
 Hearington, Debra K. 346
 Heck, Gerard L. 334
 Heflin, David 37
 Hegre, Erling S. 318
 Heinz, Robert A. 283, 296, 379
 Heiss, F. William 131
 Heldberg, Cynthia M. 301, 379
 Helfgott, Myron 217
 Hellman, Larry Frank 252
 Hellmuth, William F. 227
 Helmick, Katherine M. 339
 Hench, Miles E. 330
 Henry, Charles E. 328
 Henry, Charles R. 217
 Henry, Daniel A. 337
 Henry, JoAnne K. 346
 Henry, Laurin L. 131
 Henry, Neil W. 115, 140
 Hephner, Thomas A. 257, 275
 Herman, John E. 107
 Heroy, John N. 216
 Herrick, Stephen 335
 Hess, Michael L. 324, 334
 Hester, Robert F. 204
 Heubach, Kathleen 268
 Heuman, Douglas M. 325
 Hevener, James L. 160
 Hibbert, Jacqueline M. 320, 339
 Higgins, E. Stanle 320
 Hiley, David R. 377
 Hill, Ada 269
 Hill, Matthew 332
 Hill, Sharon Jones 187
 Hilliard, Norman L. 360
 Hillner, Bruce E. 325
 Hilton, John T. 193
 Hindle, Michael 359
 Hines, Susan 326
 Hingsbergen, Elizabeth A. 331, 337
 Hirsch, Herbert 130
 Hirsch, Jerry I. 338
 Hirsch, Kirsten 32
 Hirt, Susanne B. 171
 Hobbs, Robert C. 187
 Hobson, Rosalyn S. 293
 Hodge, Bartow 229
 Hodges, Elizabeth S. 93
 Hodges, James O. 269
 Hoffer, George E. 227
 Hoge, Randolph H. 329
 Hogge, Jacquelyn P. 337
 Holdford, David A. 359
 Holley, Charles L. 226
 Holloway, Kathryn L. 339
 Holmes, Clarissa S. 134
 Holmes, Raymond T., Jr. 226
 Holmes, Walter M. 327
 Holsworth, Robert 130
 Hom, Mark 337
 Honnold, Julie A. 140
 Hooker, James E. 90
 Hootstein, Edward 268
 Hopper, Elizabeth A. 218
 Hopper, Gary C. 218
 Hormachea, Carroll R. 146
 Horsley, J. Shelton, III 338
 Horvatic, Paula K. 327, 335
 Hotchkiss, Melissa A. 166
 Houston, Todd 87, 153
 Howard, Catherine W. 134, 371
 Howard, Edward 371
 Howell, Janet 32
 Hoyle, Laura Sharon 329
 Hsia, Peng-Wie 338
 Hsia, Peng-Wie 288
 Hsu, Hsiu-Sheng 327
 Huang, David T. 337
 Huang, Mark E. 333
 Hubbard, Elbert W. 228
 Huber, Elizabeth C. 325
 Hubona, Geoffrey S. 229
 Hudson, Joanne C. 319
 Huf, Ernst G. 334
 Huff, Thomas F. 327
 Hull, Rita P. 226
 Hummel, Russell S., III 319
 Hummer, T. R. 93
 Humphrey, Reed H. 171, 333

Humphrey, Ronald H.	230	Karnes, H. Thomas	349, 359, 379	Kreutzer, Jeffrey S.	333
Hunt, Eugene H.	230	Karp, Stephen E.	340	Kreutzer, Kathleen O'Kane	301, 334
Hunt, Lindsay M., Jr.	243, 252, 378	Karselis, Terence C.	161	Krieg, Richard J.	331
Hurley, Robert E.	166	Kasper, George M.	228	Krieg, Richard J., Jr.	318
Hurt, Terry W.	319	Kastetter, Sean K.	330	Krishnagiri, Sheama	166
Hurt, Waverly Glenn	328	Katz, P. Gary	340	Kruczek, Theresa A.	336
Hutcheson, Douglas P.	328	Kaugars, George E.	253, 330	Krystal, Geoffrey W.	326
Hutchinson, Janet R.	131	Kauma, Scott W.	327, 328	Kubal, Wayne S.	337
Hutchison, Elizabeth D.	365	Kavanagh, Brian D.	337	Kuemmerle, John F.	325, 334
Hylemon, Phillip B.	320, 323, 327	Kavanagh, Julia C.	325	Kuemmerle, Nancy	331
Hymes, Anthonetta J.	322	Kay, Saul	330	Kuhn, Elisabeth D.	93
Hynson, Priscilla C.	185	Kazanoglu, Altug	254, 330	Kukreja, Rakesh C.	324
Ingersoll, Karen	323, 336	Kazanov, Leonard A.	321	Kunos, George	323, 333
Ingram, Kathleen M.	134	Keefe, William E.	320	Kurgans, Martha	323, 336
Ingrassia, Catherine E.	93	Keelen, Felicia L.	32	Kurtulus, Ibrahim S.	230
Ingroff, Victoria E.	326	Keenan, Richard L.	319	Kuzel, Anton J.	321
Ipsen, Kent F.	197	Keesee, Gordan	276	Laban, Lawrence F.	93
Ipsen, Shyla	40	Keller, Michael A.	93	Lacatell, Andrew D.	99, 138
Irani, Anne-Marie	323, 332	Keller, Ronald E.	218	LaFratta, Mary Anna	192
Irby, W. Robert	323	Kelley, Virginia J.	319	Laine, Fred J.	330, 337
Isaacson, Robert J.	253	Kellogg, Glen E.	357	Lamb, Charles	334
Ishac, Edward J. N.	333	Kellum, John M.	339	Lamb, Robert G.	323, 333
Iverson, Susan L.	197	Kendler, Kenneth S.	336	Lamb, Robert L.	171
Jackson, Arlene	373	Kenamer, J. David	76, 111	Lambert, John D.	230
Jackson, J. Howard	230	Kennedy, Daniel T.	359	Lambie, Rosemary	268, 275
Jackson, M. Njeri	80, 131	Kennedy, Susan Estabrook	107	Landis, Alan L.	185
Jackson, Yolanda	32	Kenny, Dawn	37	Lane, Lionel C.	365
Jackson-Cook, Colleen K.	322, 328, 330	Kerkering, Kathryn W.	328, 332	Lane, Shelly	166
Jacobs, Fredrika H.	187	Kerkering, Thomas M.	326, 334	Langston, Nancy F.	341, 346, 379
Jakoi, Emma	333, 338	Kessler, Fay K.	333	Lanier, Jack O.	334
James, G. Watson	323	Kester, Karen M.	83	Laskin, Daniel M.	253, 338
James, John R.	359	Keve, Paul W.	90	Lasser, Andrew A.	334
James, Vivien E.	359	Kevorkian, Richard E.	214	Latané, David	93
Janus, Charles E.	254	Khanna, Shiv N.	127	Lavery, Roger M.	76
Jarrell, George R.	177	Kiecker, Pamela	232	Lavoie, Suzanne R.	326, 331
Jena, Purusottam	127	Kier, Lemont B.	357	Lawal, Babatunde	187
Jena, Tripti	333	Kiesler, Donald J.	134	Lawrence, Walter, Jr.	338
Jenkins, Christopher	336	Kilgore, Dennis K.	336	Lawton, Marcia J.	177
Jenson, Cary E.	336	Kilpatrick, S. James	334	Leahey, Thomas H.	134
Jesse, Robert L.	324	Kilpatrick, S. James, Jr.	320	Lehman, Deborah A.	327
Jesse, Robert W.	335	Kim, Yanggon	115	Lee, Allen	229
Jesudian, Alice N.	336	Kimball, Pamela M.	340	Lee, Hyung Mo	338
Jeter, Carolyn R.	321	King, Anne L.	326, 338	Lee, Karen Ann	31
Johnson, Betty Anne	35, 325	King, Elizabeth C.	217	Leichnetz, George R.	318
Johnson, Christopher R.	337	King, Katina	325	Lenhardt, Martin L.	288
Johnson, E. Bruce	319	King, Michael D.	330	Lensen-Tomasson, Nancy	216
Johnson, Gary T.	146	Kinney, James J.	93	Leone, Susan D.	275
Johnson, Iris W.	230	Kirby, Donald F.	320, 325, 335	Leong, David S.	218
Johnson, James H.	318	Kirby, Mathis A.	319	Leppo, John P.	32
Johnson, Melanie	41	Kirkpatrick, Mary Ann	359	Leshner, Robert T.	328
Johnson, Michele H.	337	Kirkpatrick, Peter S.	101	Lester, Denise D.	319
Johnson, Miles F.	83	Kirkwood, Craig F.	359	Levasseur, Joseph E.	324
Johnson, Robert E.	115	Kirkwood, Cynthia K.	359	Levenson, James L.	336, 338
Johnson, Shelby M.	319	Kirschbaum, Barry B.	326	Levy, James R.	325
Johnston, Russell A.	230	Kissinger, Jeanette F.	346	Lewelt, Wlodzimierz	319
Johnston, Wallace R.	230	Kliwer, Wendy L.	134, 153	Lewis, Andrew M.	114
Jolles, Howard	337	Klinger, Rochelle L.	336	Lewis, Annabel M.	171
Jolles, Paul R.	337	Klinker, Nora A.	321	Lewis, Judith A.	346
Jollie, William P.	318	Knipe, Edward E.	140	Lewis, Robert E.	335
Jones, Jean Boyd	365	Knisely, Janet S.	323, 333, 335	Li, Jing	325
Jones, Norrece T.	80, 107	Ko, Daijin	320	Li, Si-Jia	333
Joseph, Mary	335	Koch, William C.	332	Libby, Bruce	337
Judd, William J.	268	Koerin, Beverly B.	365	Liberti, Joseph P.	320
Jung, Audrey M. H.	199	Koertge, Thomas E.	254	Lichtman, Aron H.	333
Jurgensen, Michael D.	166	Kontos, Hermes A.	301, 377, 379	Lieberman, Claire	217
Kachnic, Lisa A.	337	Kontos, Michael C.	321, 324	Liemberger, Alyssa E.	339
Kalen, Joseph D.	338	Koontz, Warren W., Jr.	338	Lin, Peck-Sun	337
Kalimi, Mohammed Y.	334	Koplin, Bruce M.	187	Lindauer, Steven J.	248, 253
Kallar, Surinder K.	319	Kornstein, Michael J.	331	Linder, Fredric	275
Kanamori, Cesar I.	325	Kornstein, Susan G.	328, 336	Lindholm, Christina O.	202
Kane, Francis R.	319	Kos, Ferdynand	327	Lindsey, Barbara J.	161
Kaplowitz, Lisa G.	326, 334	Kovacs, Pamela J.	365	Liner, Steven R.	321, 332
Kaplowitz, Paul B.	332	Kraft, Kenneth A.	338	Link, Kurt	325
Kaputof, Robert M.	192	Kraus, Richard C.	166	Lipp, Susan L.	346
Karkowski-Shuman, Laura	335	Kregel, John J.	268	Lippman, H. Robert	330
Karnam, Srinivasa M.	334	Kreig, Richard J., Jr.	359	Little, Michael W.	232

Little, Sherill T	337	Masullo, Antonio	101	Miller, Greg	330
Littlewood, Keith E.	319	Matt,Dennis W.	318,328	Miller, Jaclyn	365
Liu,Chung I.	337	Mattauch,Robert J.	283, 293,378	Miller, James B.	214
Lloyd, Joyce A.	322	Mauney, Jacob L., Jr.	171	Miller, James W.	32
Lodge, Jeffrey R.	166	May, Everette Lee	333,357	Miller, Marianne	230
Lohr, C. Michael	115	May, Margaret L.	83	Millner, Edward L.	227
Lohr, Michael	268	May, Teresa M.	335	Mills, A.Scott	323,331
Lohuis, Ardyth J.	206	Mayer, David J.	318,319	Mills, Allan S.	260
Lokerson, Jean	269	Mayhew, Thomas P.	171	Mills, Eugene	123
Londoner, Carroll A.	275	Mayo, Fitzhugh	321	Mills, Richard R.	83
Long, James T.	204	Mays, D'Arcy P.	115	Ming, Zhu	323
Long, Stephen P.	319	Mays, James E.	115	Minisi,Anthony J.	324
Long, Veronica	260	Mazmanian, Paul E.	301,334,379	Minor, Elliott D.	230
Longest,George C.	93	McCain,Nancy L.	346	Minton, Paul D.	115
Looney, James R.	76	McCardell,Kathleen A.	325	Mirr, Edward A.	206
Loria, Roger M.	327	McCarty, John	326	Mishra,Asha S.	336
Loughran,Thomas P.	329,334	McCasland, John P.	254	Mishra,Munmaya K.	291
Loving, Amy	340	McClish,Donna K.	320	Mitchell,R.Brian	326
Lower, Richard R.	338	McClung, John Ross	318	Mitchell,Shannon K.	227
Lowman,Dianne Koontz	166	McCowen,Sara M.	83	Moeser, John V.	146
Lu, I-Li	320	McCoy, Howard E., Sr.	202	Mohan,Radhe	337
Luck, Richard S.	177	McCoy, Kathleen L.	327	Mohanty, Laxmi B.	330
Luke, Roice D.	166,334	McCreary, Micah L.	134	Mohanty, Pramod K.	324
Luketic, Velimir A. C.	325	McCue, Michael J.	166	Moitt,Bernard	107
Lurie, Harry I.	330	McCullough, James P.,Jr.	134,335	Moncure, Charles W.	330
Lutz,Harry A.,III	339	McDaniel, Kent	336	Monroe, Sara G.	326
Lyall, Vijay	334	McDaniel,Michael A.	230	Moon, Peter C.	252
Lyckholm, Laurel J.	326	McDermott,Dennis R.	232	Mooney, Catherine M.	107
Lyeth,Bruce G.	334,339	McDonald,Dan	42	Moore, Charles H.	319
Lynde, Thomas A.	254	McDonald,R.Michael	228	Moore, Edward W.	325
Lyng, Stephan G.	140	McGee, Henry A.,Jr.	283, 291,378	Moore, James T.	107
Lyon, Debra E.	346	McGrath, James E.	291	Moore, Shelly S.	325
Ma, Yunlong	335	McGrath, John H., III	140	Moore, Sonja O.	101
MacIntyre, Pamela	321	McGuire, Hunter	340	Moran,Richard G.	333
MacLaughlin,Susan B.	328	McIwaine, Benjamin H.	321	Moray, Lawrence	338
MacLean,Charles J.	335	McKeith, James John	321	Morecroft, Josephine F.	229
Macrina, Francis Louis	327	McKelvey, Roy D.	192	Morgan,Harvey B.	359
Madigan,M. Jeanne	167	McKenney, James M.	359	Moriarty, Laura J.	90
Maes, Hermine H.M.J.L.	322	McKenzie, Norma D.	336	Moritz, Jennine	336
Magill,Cheryl C.	275	McKinley, William O.	334	Morkoc, Hadis	293
Mahoney, John M.	134	McLaughlin,Mary	192	Morris, J. Richard	114
Mahoney, John S.	140	McLeod,Alan M.	268	Morrison,Eileen	347
Maier, George W.	339	McMahon, Brian T.	177	Morse, Charlotte C.	93
Makhlouf, Gabriel M.	325	McMillan, James H.	275	Morton,Lawrence	328,331
Makhoul,Raymond G.	340	McMurtry, Cynthia	325	Moskowitz, William B.	332
Malinoski, John B.	192	McPherson,Richard A.	330	Moszer, Max	227
Malloy, Walter N.	324	McVoy, Michael	327,332	Mourino, Arthur P.	248,254
Manaster, B. J.	337	Meganck, Robert J.	192	Moxley, George F.	327
Manganello, Anne-Marie A.	332	Meggs, Philip B.	193	Muddiman,David C.	87
Mangum,Anthony B.	93	Mehrhof, Austin L., Jr.	339	Mueller, Dawn G.	328,332
Mann,Bernard A.	37	Meixner, Elizabeth L.	172	Mulligan,Thomas	325
Mann,Robert I.	229	Mellette, Susan J.	323	Mullinax, Perry Franklin	327
Mao, Jianren	319	Meloy, Linda D.	332	Mulvaney, James A.	337
Mapp, John	276	Melton,Cheryl M.	372	Muniz,Antonio E.	321,331
Maragh,Hallene A.	339	Menajovsky, Leon B.	325	Munjas, Barbara A.	347
Marbury, Alicia	76	Merchant,Randall E.	318,338	Muñoz,Eugenia	101
March, Clark L.	359	Meredith,M.Alex	318	Munro, Cindy L.	346
Marconi,Richard T.	327	Merricks, Trenton D.	123	Munro, George E.	107
Maréchal, Chantal Anne-Marie	101	Messmer, James M.	301, 337,379	Munro, Sue F.	371
Mark,Barbara A.	347	Messmer, Michael W.	107	Munson, Judith A.	333
Markowitz,Sheldon M.	326	Messmer, Sue Ann	371,377	Munson, Paul J.	321
Marks, Lee Malcolm	321	Mest,Simon J.	323,340	Muren,Orhan	323
Marlow, Craig H.	204	Meyer, Aleta L.	134	Murphy, Neil B.	228
Marmarou,Anthony	337,339	Meyer, C. James	197	Murphy-Judy, Kathryn A.	101
Marolla, Joseph A.	140	Meyers, Margaret Elizabeth	325	Murray, Robert P.	206
Marrion, Melissa W.	206	Michael, Jay B.	319	Murray, Tina S.	373
Marshall,Kathy L.	319	Mickell, John Joseph	319	Murrelle, Edward Lennon	323
Marshall, Paule	93	Mickell, John Joseph	332	Murrill,Branson W.	115
Marshall, Wayne K.	319	Midha,Meena	334	Murrill,Malcolm L.	115
Marsland,David W.	321	Miederhoff, Patrick A.	359	Mustafa,Husain M.	131,157,233
Martin,Bernard M.	214	Mikkelsen,Ross	327,337	Mustafa,Nancy C.	101
Martin,Billy R.	333	Mikulecky, Donald C.	334	Mustain, W. Anthony	337
Martin,E.Davis, Jr.	177	Miller, Amy	329	Myer, Edwin C.	328
Marwitz, Jennifer H.	334	Miller, Don M.	230	Myers, Barbara J.	134
Mason, Joseph A.	365	Miller, E. G.	223,228,378	Myers, Donald W.	230
Massey, Gita V.	332	Miller, Gerald E.	283, 288, 323, 334, 379	Myers, Phyllis S.	228

Nadder, Teresa S.	161	Parmelee, Dean X.	331,336	Prinz, Andreas	324
Nakatsuka,Mitsuru	319	Parnell, Gregory S.	115	Proto, Anthony V.	338
Nakoneczna,Irene	330	Patrick,Graham A.	333,359	Pryor, Ann	346
Naleppa,Matthias J.	365	Patterson, John L., Jr.	323	Pugh, Carol B.	359
Nan, George D.	216	Patterson, Ronald H.	329	Pyles, Michael A.	359
Nance, Walter E.	331	Patykula, John T.	206	Qu, Yun	87
Nance, Walter E.	322	Paulsen, Walter H. J.	324	Quagliano, Peter V.	338
Narla,Lakshmana Das	338	Payton, Otto D.	171	Quarterman, Dale L.	216
Narula,Subhash C.	230	Pearce, C. Glenn	230	Quint,Roger I.	338
Nash,Carolyn R.	332	Pearson,Robert E.	293	Rafii,Amir	319
Naumann,Thomas J.	334	Peart, Joanne	359	Raines, Deborah A.	346
Navarro, Consuelo	101	Peay, Robert W.	365	Ramirez,Gabriel G.	228
Neal, M. Pinson, Jr.	337	Peberdy, Mary Ann	324	Ramo, Ary S.	318,334
Neale, Michael C.	335	Peel, Carolyn	321	Rankin, Daphne L.	140
Neel, Nancy L.	250	Peeples, Edward H., Jr.	335	Rao, Bijan K.	128
Neier, Heather	327	Peischl, Margaret T.	101	Rao, T. Premasudha	325
Neifeld, James P.	340	Pelfrey, William V.	90	Rasmussen, Keith G., Jr.	337
Nelson, David	321	Pellegrini, Joan M.	250	Rasnic, Carol D.	157,232,233
Nelson, Kirk L.	335	Pellock, John M.	328	Rasul, Iftekhar	323
Nelson, Lynn D.	140	Peloner, Anthony L.	336	Raychowdhury, Pratip N.	115
Nestler, John	325, 328, 333	Penberthy, Lynne T.	326	Ready, Keith F.	260
Netting, F. Ellen	365	Pendergast, John S.	93	Redmon, Robert B., Jr.	123
Nettleman, Mary D.	301, 325, 379	Pendleton, James D.	93	Redmond, Richard T.	229
Newdick, Richard L.	218	Peng, Thomas C.	328	Reed, Daisy F.	268
Newlin, Dika	206	Peoples, Napoleon L.	35	Reese, Charles A.	166
Newman, Karen J.	325	Perlin, Jonathan B.	326	Reeves, Daniel J.	179, 378
Newmann, William W.	111, 131	Perman, Jay A.	331	Reeves, Jane W.	365
Newsham, Irene F.	318	Perozzi, Rhoda E.	83, 154	Reeves, Thomas M.	318
Newsome, Heber H.	301, 339, 379	Perry, Patricia H.	93	Regelson, William	323
Newton, Carlton R.	217	Perry, Regenia A.	187	Reid, Christine A.	177
Newton-Guest, Shirley R.	365	Perry, Robert P.	301, 325, 379	Reilly, Robert J.	227
Ngwenyama, Ojelanki	229	Peters, Gerald A.	83	Rein, Steven R.	115
Nichols-Casebolt, Ann M.	365, 380	Peters, Sarah	166	Reinders, Thomas P.	349, 359, 379
Nicholson, June Orr	65, 76	Peterson, Darrell Lynn	320	Remmers, Rebecca E.	331
Niculescu, Vasile A.	127	Peterson, Steven P.	227	Ren, Shunlin	327
Nixon, Daniel E.	326	Petrie, Paul E.	179, 378	Reppert, Betty	35
Nixon, John V.	324	Pettit, Denise A.	327, 333	Resler, Daniel R.	115
Nogi, Jay	329	Phelps, Lorna M.	323	Retchin, Sheldon M.	325
Nooney, Thomas W., Jr.	329	Philipsen, Maike I.	275	Revere, James H., Jr.	243, 253, 378
Norris, Wilma D.	331	Phillips, Linda L.	339	Rexroad, Dennis H.	185
North, Harold E.	217	Phillips, Richard A.	228	Reynolds, Diane	41
Norville, Jerry A.	166	Phillips, Richard E.	187	Reynolds, Elizabeth R.	93
Nunley, Julia	321	Pickler, Rita H.	346	Reynolds, Kevin A.	357
O'Neal, Charles H.	327, 359	Pidcoe, Peter	171	Reynolds, Margaret B.	34
O'Toole, Dennis M.	227	Pieper, Alice	269	Reynolds, Ronald P.	260
Ockerstrom, Lolly	93	Pierce, Norma A.	31	Rezba, Richard J.	268
Oehler, John S., Jr.	257, 268, 378	Pieters, Philip C.	338	Rhea, Laura	268
Oggel, L. Terry	93	Pinson, Andy G.	325	Rhone, Henry G.	31, 377
Oken, Don	323	Pittman, Roland N.	334	Rice, Doris	35
Olbrisch, Mary Ellen	336, 338	Pitts, Michael W.	230	Richard, Alfred J.	358
Olchanski, Vladislav	321	Plunkett, Gregory M	83	Richards, Douglas J.	206
Olds, Philip R.	226	Poklis, Alphonse	327, 330, 333	Richards, Melanie J.	199
Olgas, Marya	346	Poland, James L.	334	Richards, Walter L., Jr.	83
Orellove, Fred P.	268	Polatty, Rose Crystal	326	Richards-Bullock, Amanda	328
Ornato, Joseph P.	321, 323	Polk, Ronald E.	323, 359	Richardson, David W.	323
Osgood, Nancy J.	165	Pontiflet, Addie R.	166	Richardson, Judy S.	268
Oswald, Donald P.	336	Porter, Joseph H.	134	Riddle, Daniel L.	171
Ottenbrite, Raphael M.	87	Posner, Marc P.	340	Ridgway, Ellis B.	334
Ouchi, Akira	193	Potter, Ted	179	Riebeling, Christy	35
Overvold, Angelina E.	101	Povirk, Lawrence F.	327, 333	Riehl, Julian William	229
Owen, Duncan S., Jr.	327	Povlishock, John T.	318, 338	Rife, Jason P.	357
Ozcan, Yasar A.	166	Poynor, Wesley J.	359	Riley, Roger S.	330
Ozman, Howard	276	Pozez, Andrea L.	339	Riley, William T.	336
Page, Dennis G.	253, 330	Prasad, Uma R.	338	Rimler, George Warren	230
Pagels, John F.	83	Pratt, Glenn R.	123	Ripley, Elizabeth B. D.	326
Palen, J. John	140	Pratt, LeEtta	260	Risatti, Howard	187
Palmer, Mark A.	296	Pratt, Michael D.	227	Ritter, Joseph K.	333
Palmer, Shirley M.	359	Prentice, Katherine A.	161	Rizzo, William B.	320, 323, 332
Pan, Peter H.	319	Prescott, Carol A.	335	Robbins, Steven B.	134, 335
Pandak, William Michael	325	Prest, A. Patrick L., Jr.	171	Roberson, Margaret	325
Pandurangi, Ananda K.	336, 337	Price, Donald D.	319	Robertello, Francis J.	252
Pandya, Arti	323, 330, 331	Price, Jeffrey T.	193	Roberts, John D.	326
Panebianco, Deborah I.	325	Price, Ronnie J.	293	Roberts, Joseph E.	319
Parham, Iris A.	165	Price, Steven	334	Roberts, William N., Jr.	327
Parker, James W.	218	Priebe, Richard K.	93	Robertson, Louise W.	332
Parker, Lorraine M.	115	Primeaux, David	115	Robinson, J. Lawrence	206

Robinson, Susan E.	330,333	Schirch, LaVerne G.	320	Silvers, Stuart J.	87
Roche, Walter J.	334	Schlesinger, Jeanne B.	301	Simon, Diane J.	257,269,378
Rock, William L.	359	Schmeelk, John F.	115	Simons, Dianne F.	166
Rodgers, Janet B.	218	Schmidt-Ullrich, Rupert	337	Sims, Robert L.	101
Rodgers, Philip T.	359	Schmitt, James	326	Singh, Nirbhay N.	331,336
Rodwell, Mary K.	365	Schneider, Robert K.	323,336	Sirica, Alphonse E.	323,331
Roebuck, Donald G.	39,40	Schneider, Robert L.	365	Sismanis, Aristides	330
Roesser, James R.	320	Schnoll, Sidney H.	327,335	Sites, Linda Q.	101
Rogers, Alfred H.	325	Schoolwerth, Anton C.	326,334	Slater, William K.	335
Rogers, Kenneth S.	320	Schrieberg, Charlotte S.	366	Slattum, Patricia W.	359
Romhilt, Donald W.	324	Schroeder, Diane L.	326	Sleeth, Randall G.	230
Ropelowski, Debra A.	160,378	Schubert, Mitchell L.	325,334	Small, Ralph E.	323,359
Rose, Samurl Rutherford	321	Schulz, Peter	146	Small, Sharon Stevens	359
Rosecrans, John A.	177,333	Schumacher, Sally A.	275	Smedley, Audrey Y.	80,140
Rosenbaum, Allan	197	Schumann, Morton D.	335	Smetana, Frantisek	206
Rosenbaum, Charles I.	321	Schwartz, Bill N.	226	Smith, Alfred L., Jr.	232
Rosenblum, Amy C.	365	Schwartz, Charles C.	325	Smith, Charles H.	230
Rosenblum, Phillip L.	365	Schwartz, Lawrence B.	327,330	Smith, Elsie v.P.	128
Rosenblum, William I.	330	Schwartz, Martin S.	365	Smith, Forrest L.	333
Rosenthal, Amy J.	326	Schwartz, Sanford	365	Smith, Harlan L.	373
Ross, David L.	327,335	Schwarz, Philip J.	107	Smith, Harold L.	360
Ross, Vernon H.	319	Scotch, Charles Bernard	366	Smith, J. Professor	358
Rossi, John A.	269	Scotese, Carol A.	227	Smith, Maynard P.	330
Rossiter, Louis F.	166,335	Scott, Nancy M.	202	Smith, Michael R.	90
Roth, Edna T.	366	Scott, Kathleen J.	35	Smith, Robin McCollough	260
Roth, Karl S.	332	Scott, Robert B.	323	Smith, Rosemary T.	187
Rothberg, Simon	321	Scully, Diana H.	140,151	Smith, Sheila A.	346
Rothemich, Stephen F.	321	Seaberg, James R.	365	Smith, Tabathia	321
Rowe, Joy P.	326	Seago, Brenda L.	301	Smith, Ted J., III	76
Rowell, Criag Gorlick	338	Seaman, David S.	331,340	Smith, Thomas J.	326,327
Rozycki, Henry J.	328,332	Sedaghat, Hassan	115	Smith, Vernon	338
Rucker, Karen S.	333	Seeds, John W.	328	Smith, Wade K.	326
Ruddy, Shaun J.	326	Seers, Anson	230	Smith, Wally R.	320,326
Ruder, Suzanne M.	87,153	Segal, Florence Z.	366	Smith, William E.	349,359,379
Ruffin, David M.	359	Segreti, Eileen M.	328	Smock, Leonard A.	82
Rugg, Robert D.	146	Sehweitzer, Michael A.	339	Smoker, Wendy R. K.	330,338
Ruggiero, John S.	360	Seibel, Hugo R.	301, 318,379	Snedden, Albert T.	65, 87,377
Rule, Warren R.	177	Seidenberg, Arthur J.	65,83, 152,153, 154,155,156,378	Snellings, Eleanor C.	227
Russell, Dojelo C.	366	Seipel, Joseph H.	217	Snyder, Steven R.	326
Russell, Edward C.	332	Seither, Richard L.	326,327	Soine, William H.	357
Russell, Milo F.	214	Self, Phyllis	43	Sombati, Sompong	328
Rutan, Sarah C.	87	Sessler, Curtis N.	326	Sommer, Sandra J.	161
Ryan, John J.	83	Seyfarth, John T.	275	Sonenklar, Neil	331,336
Rzagalinski, Beverly A.	333	Shadomy, H. Jean	327	Sonnino, Roberta E.	331,339
Salandro, Daniel P.	228	Shah, Jagdip B.	319	Sood, Aradhana A.	336
Salley, John J.	253	Shah, Mary Snyder	171,318	Sood, Rakesh K.	337
Salter, David R.	339	Shapiro, Jay H.	319,331	Spangler, Kevin M.	337
Salyer, Jeanne	346	Shapiro, Steven	328, 331,334	Sparks, Howard	269
Sander, Richard	46	Sharman, Charles	276	Spede, Edward C.	226
Sanders, Karen	301,327,335,379	Sharp, Jack K.	333	Spence, Steven N.	321
Sandgren, Eric	296	Sharp, Julie G.	253	Spencer, Frederick J.	335
Sandhu, Baldev S.	339	Sharp, Nicholas A.	93	Spencer, Robert F.	330
Sandkam, Sherry T.	299	Shaw De Paredes, Ellen S.	338	Sperry, John B.	226
Sandkam, Sherry T.	379	Shaw, Chung I.	338	Spindle, Roxanne M.	226
Sange, Gary R.	93	Shaw, James E.	320,326	Spinelli, Michael A.	230
Sanyal, Arun J.	325	Shelton, Keith R.	320,359	Spiro, Jack D.	123,124
Sarbin, Alan G.	254	Shepard, Richard K.	324	Spottswood, Stephanie E.	331,338
Sarkar, Mohamadi A.	359	Shepherd, Jayne T.	166	Sreedhar, Sue S.	332
Sarrett, David C.	252	Sheridan, Michael J.	365	Sriram, Thiruneermalai G.	336
Satin, Leslie S.	333,334	Sherron, Ronald	276	Stackhouse, Kenneth A.	101
Sato-Bigbee, Carmen	320	Shiang, Rita	323	Stallings, L. Robert	319
Satterthwaite, Cameron B.	128	Shiffman, Mitchell L.	325	Stasson, Mark F.	134
Sauer, Ronald L.	161	Shillady, Donald D.	87	Stastray, Janet F.	331
Saunders, David N.	365	Shin, Tai S.	228	Steel, Judith	199
Savas, Jeannie F.	321,339	Shivy, Victoria	134	Stepka, William	360
Savitt, Charles M.	269	Shoaf, Lisa D.	171	Stevens, Ann G.	330
Sawin, Kathleen J.	346	Sholar, Elbert F.	336	Stewart, Deborah G.	334
Sawyer, Stephen T.	333	Sholley, Milton M.	318	Stewart, Jennifer K.	83, 156
Scalin, Charles B.	193	Shukla, Ramesh K.	166	Stith-Willis, Annie M.	230
Scarsdale, J. Neel	320,357	Shumard, Sally L.	185	Stoesz, David P.	365
Scharer, Janet L.	250,252	Sica, Domenic A.	325	Stolberg, Arnold L.	134
Schatzki, Peter F.	323	Siebers, Jeffrey V.	337	Strandberg, Warren D.	275
Scheinman, Jon I.	332	Silberg, Judy L.	323,335	Stratton, Leslie S.	227
Schenkein, Harvey A.	243, 254,378	Silver, Dana Lise	332	Straub, Richard E.	335
Schieken, Richard M.	332	Silverman, Joel J.	335	Strauss, Robert A.	248, 253,338
Schiltz, Jack H.	260				

Strommer, Joan E.	216	Tucker, Woodie L.	230	Weistroffer, H.Roland	229
Strong, Stanley R.	134	Tuckman,Howard P.	223, 227,378	Welch,Rizpah	269
Strube, Nancy L.	193	Tunnell, Ted	107	Welch,Sandra P.	333
Stubbins, James F.	358	Turner, Christina B.	141	Wells, Mabel G.	366
Stuckey, Charles P.	326	Turner, Gail C.	83,154	Welshimer, Herbert J.	327
Stump, Billy L.	88	Turner, Mary Ann	338	Welzel,Alvin K.	232
Sugerman,Harvey J.	338	Turner, Pamela	193	Wenzel,Richard P.	323,335
Sugerman,Harvey J.	339	Tush,Gretchen	359	Wergin, Jon F.	276
Sullivan,Michael Scott	171	Twigg, Judyth L.	131	Wessells, Frances D.	199
Sullivan, Patrick	335	Tyler, Betty L.	319	West,Charles W.	206
Suter, Cary G.	328	Tyler-Cross, Ruth E.	327	West,Randal J.	329
Sutherland, John W.	229	Umberger, Paul M.	230	Westkaemper, Richard B.	357
Svirsky, John A.	253,330	Unger, John W.	254	Wetton,Philip S.	214
Swafford,Larry G.	172	Upton,David E.	228	Wetzel, James N.	227
Swanson,Mary Scott	233	Urbach, John R.	336	Weymouth,Lisa A.	327,330
Swartz,Henry C.	202	Urban, David J.	232	Wheeler, Emma	171
Sweeney, William R.	293	Urofsky, Melvin I.	107	Wheeler, Mark T.	359
Swisher, Karen N.	166,327	Vacca,Richard S.	275	White, Ann S.	101
Switz,Donald M.	301, 325,379	Valerie, C. Kistoffer	327,337	White, Doris A.	269
Sypniewski,Edward	338	Valerie, Julie B.	202	White, Eugene V.	360
Szakai,Andras K.	318	Vallarino, Lidia M.	87	White, Kenneth R.	166
Szari,Louis J.	218	Vallentyne, Peter	123	White, Kimber L., Jr.	333
Szucs, Richard A.	338	Van de Walle, John A.	269	White, Sara L.	332
Tabassian,Ali R.	329	Van Tuyle, Glenn Charles	320	White, Stuart B.	321
Tabb, Heidi S.	338	Van Winkle, Lester G.	217	White, Susan G.	347
Tadler, Scott C.	321	Vance, Robert Leonard	291,335	Whitehead, W. Camden	204
Tait, Gregory B.	293	Vanderمولen,David T.	328	Whitehill, James Michael	252
Talbert, Robert M.	107	Vanner-Nicely, Lauren	323	Whitehurst-Cook,Michelle Y.	321
Tao, Qing	333	Vannier, Theresa A.	326	Whitesell, J. Edwin	93
Tapia, Javier	214	Varga,Karoly	333	Whitlock,Gaynelle	276
Tartaglia,Alexander	171	Vassilev, Janet	115	Wiebusch, F. B.	254
Tarter, Martin	269	Venegoni,Sandy	346	Wier, Benson	226
Tatum, James Luther	323,338	Venitz, Jurgen	359	Wijnholds, Heiko D.	232
Tawes, John W.	338	Vennart,George P.	330	Wikstrom,Nelson	130
Taylor, Shirley M.	327	Vera, Kristi M.	35	Wiley, Jenny Leigh	333
Teitelman, Jodi L.	167	Vetrovec, George W.	324	Wiley, Paul M.	252
Tendolkar, Amol V.	359	Vieweg, Victor R.	323,335	Wiley, Shirley B.	336
Tepper, Gary C.	291	Vijayakumar, Jayaraman	226	Wilkes, Susan B.	135
Terner, James	87	Vitanza, Stephanie A.	134	Wilkins, Sandra B.	202
Terrell, William J.	115	Vlahcevic, Sonia K.	206	Wilkinson,David S.	330
Tesh,Esther M.	346	Vlahcevic, Zdravko Reno	325	Wilkinson,Diane L.	338
Tester, William	93	Voskanian, Pogos H.	335	Williams, Carrington, Jr.	338
Tew, John G.	327	Vuyyuru, Sujatha (1995)	326	Williams, Cecilia A.	171
Theogaraj, Janakiraj	335	Wade, James B.	319,336	Williams, Charles L.	319
Thomas, Clarence W.	76	Wadud,Amina	123	Williams, George H.	330
Thomas, J. Randall	336	Wagner, Christopher C.	336	Williams, J. Sherwood	140
Thompson, Lydia C.	179,378	Waldrop, Thomas C.	249,254	Williams, Jackie G.	226
Thompson,Nancy K.	197	Walker, William C.	334	Williams, Julie Elizabeth	135
Thompson,Robert B., II	226	Wallace, Michael L.	321,331	Williams, Larry J.	230
Thompson, W. Taliaferro, Jr.	323	Walsh, Joseph F.	365	Williams, Margaret L.	230
Thornton, Jack E.	228	Walsh, Scott W.	329	Williamson, Patricia Pepple	115
Thornton,Karen A.	347	Wan,Thomas T. H.	335	Willis, Dale M.	332
Timmreck, Paul W.	377	Wan,Thomas T. W.	165	Willis, H.David	227
Tipton,Gary A.	332	Ward, John D.	319,339	Willis, Mark	43
Tipton,Robert M.	135	Ward, John E.	254	Wilson, John D.	334,338
Tisinger, Betty H.	185	Ware, Joy Laurin	331,334	Wilson,Kristi E.	334
Tisnado, Jaime	338	Warmenhoven,Henri J.	131	Wilson,Neil E.	206
Tisserat,Barbara C.	214	Warren L. Felton,III	328	Wilson-King, Dawn	325
Todd, William	330	Wassef, Wahid Y.	325	Windmueller, Otti Y.	202
Tolman, David E.	324,338	Wasserman,Albert J.	323	Windridge, Graham C.	358
Tombes, Robert M.	83,327	Waterhouse, Elizabeth J.	328	Winfrey, C. Jack	335
Tondkar, Rasoul H.	226	Waters, Haidee F.	346	Winters, Lawrence J.	88
Topaz, On	324	Watlington,Charles O.	323	Wirt, Wilma H.	76
Topich, Joseph A.	87	Watson, Janice M.	202	Wise, Christopher M.	327
Toppi, Karen Ann	328	Watson,Marsha	93	Wise, Michael S.	260
Toppin, Edgar A.	80, 107	Watton,Stephen P.	88	Witherspoon, John M.	326
Torchia,Augustus G.	76	Watts, Janet H.	167	Witol,Adrienne D.	334
Toscan,Richard E.	179,378	Wayne, Jennifer Susan	288	Witorsch,Raphael J.	334
Towne, Alan R.	328	Weaver, Michael F.	327	Wnek,Gary E.	291
Townsend, J. Ives	323	Weaver, Warren E.	358	Wohl,Daniel L.	330,331
Trani,Eugene P.	107,377	Webb, Stanley R.	83	Wohler, Kurt W.	319
Trikha,Gita	319	Weber, David J.	336	Wolf, Barry	320, 323,331
Tropp, Emanuel	366	Wehman, Paul H.	177, 269,334	Wolfe, Eleanor V.	167
Trumble, Robert R.	230	Wei,Enoch P.	324	Wolfe, Luke G.	320,339
Tsao, Ding H.	254	Wei,Xin	339	Wolman,Richard L.	319,338
Tuck, Inez	347	Weiss, Joshua R.	319	Wong, Dennis A.	327

Wong, Edward S.	326
Wong, Michael T.	326
Wood, Alfred Jeffrey	254
Wood, D. Robley, Jr.	230
Wood, Isaac	331,336
Wood, James A.	114
Wood, John H.	360
Wood, Judith W.	269
Wood, Mark	123
Wood, Mark Allen	324
Wood, Mark D.	80
Wood, Maurice	322
Wood, Van R.	232
Woodard, Charlene E.	323,335
Woodlief, Annette M	93
Woods, Lauren A.	333
Woodward, John J.	333
Wooldridge, Blue E.	131
Woolman, Matthew	193
Worley, Patricia	373
Wornom, Isaac L., III	339
Worthington, Everett L.	135
Wright, A. James	185
Wright, Christine S.	357
Wright, Christine S.	320
Wright, H. Tonie	320
Wright, John D.	329,331
Wright, Keith C.	177
Wright, Michael E.	88
Wright, Terry Lewis	338
Wu, Fang-Sheng	83
Wu, Jiuhua	327
Wu, Qiuwen	337
Wu, Weiping	146
Wu-Pong, Susanna	359
Wyeth, Peter L.	377
Wyman, Jean, F.	329
Wynne, A. James	229
Yager, Dorne R.	339
Yanchick, Victor A.	349, 359, 359
Yanovich, Saul	326
Yarowsky, Morris	214
Yerian, Jean M.	6,31
Yin, Chang	329
Yingling, Doris B.	346
Yoon, Youngohc	229
Younce, Susan F.	283
Young, Daniel	41,42
Young, Donald R.	82
Young, Harold F.	339
Young, Nelson F.	330
Young, Richard	357
Young, Robert A., Jr.	171
Younger, Janet B.	341, 346, 379
Yu, Robert K.	319, 328, 330
Yung, Ringo	204
Yunker, Nancy S.	360
Yusi-Lenn, Almira Udarbe	326
Zaret, Esther	269
Zehner, Zendra E.	320
Zeng, Gui-Chao	320
Zfass, Alvin M.	325
Zieve, Franklin J.	325
Zuelzer, Wilhelm A.	329, 334
Zwicker, Marcia	65, 74
Zwicker, Robert D.	337

Index

Academic Affairs, Course in	6	Art Education, Department of	185
Academic Credit, Other Sources of	19	Art Foundation Program	185
Academic Common Market	23	Art Foundation, Courses in	185
Academic Organization	3	Art History, Courses in	188
Academic Student Government Association	34	Art History, Department of	187
Academic Success Center	62	Articulation agreement between Virginia Commonwealth University and Virginia Community Colleges (Academic Campus Only)	18
Accident Insurance	26	Arts, Courses in	184
Accounting, Courses in	234	Arts, School of the	179
Accounting, Department of	226	Attendance Regulations	49
Accreditation	389	Audit Registration	52
Add/Drop Period	53	Basic Health Sciences	363
Address	49	Basic Human Sciences, Courses in the	255
Administration, University	377	Biochemistry and Molecular Biophysics, Courses in	310
Administrative Systems	43	Biochemistry and Molecular Biophysics, Department of	319
Admission Guidelines	10	Biology, Courses in	84
Admission Guidelines for Programs Requiring Specialized Supplementary Information	11	Biology, Department of	82
Admission Notification	16	Biology, Minor in	84
Admission Procedures	13	Biomedical Engineering Program	288
Admissions	9	Biomedical Engineering, Courses in	289
Adolescent Medicine, Division of	331	Biostatistics, Courses in	311
Adult Education, Courses in	276	Biostatistics, Department of	320
Adult Health Nursing, Department of	345	Board of Visitors	377
Advanced Scholars Program	21	Bookstore, Academic Campus	42
Advising Program	49	Bookstore, MCV Campus	42
African-American Studies, Courses in	80	Business Math and Statistics, Courses in	235
African-American Studies, Minor in	80	Business Services	41
Allergy/Immunology, Division of	332	Business, Minor in General	226
Allied Health Professions, Courses in	161	Business, School of	221
Allied Health Professions, School of	159	Calendar, 1998-1999 University	vii
Alumni of the University	2	Calendar, 1999-2000 University	xi
Ambulatory Care, Division of	336	Cardiology, Division of	324
American Studies, Courses in	82	Cardiothoracic Surgery, Division of	339
American Studies, Minor in	82	Career Center, University	34
Anatomical Pathology, Division of	330	Categories of Student Enrollment	9
Anatomy, Courses in	310	Certificate Programs	62
Anatomy, Department of	318	Change of Major	50
Anesthesiology, Department of	319	Chemical Engineering Program	291
Anthropology, Courses in	143	Chemical Engineering, Courses in	292
Anthropology, Minor in	141	Chemistry, Courses in	89
AP Credit	395	Chemistry, Department of	87
Appeal to Waive an Academic Regulation, Academic Regulations Appeals Committee	59	Chemistry, Minor in	89
Applied Music, Courses in	210	Child and Adolescent Psychiatry, Division of	336
Applying for Financial Aid	27	Child Neurology, Division of	328
Approved Lists – Students Entering Fall 1997 and Thereafter	69	Chinese, Courses in	103
Approved Lists – Students Entering Prior to Fall 1997	71	Classification of Students	50
Art Education, Courses in	186	Clinical Laboratory Sciences, Courses in	164

Clinical Laboratory Sciences, Department of	161	Dental Hygiene, Division of	250
Clinical Pathology, Division of	330	Dental Hygiene, Program in	252
Clinical Pharmacology, Division of	325	Dentistry, School of	243
Clinical Psychology, Division of	336	Dermatology, Department of	321
Clinical Radiation Sciences, Courses in	175	Diagnostic Radiology, Division of	337
Clinical Research Center	325	Dietetic Internship	63
Clinical Research Center for Periodontal Diseases	392	Disabilities, Services for Students with	39, 47
Clinical Trials, Institute for	393	Dishonored Checks	26
College Level Examination Program (CLEP)	19	Double Major	58
College Transition Program	62	Drop vs. Withdraw	25
Commencement Participation Policy	58	Drug and Alcohol Studies, Institute for	393
<i>Commonwealth Times</i>	34	Dual Degrees	58
Communication Arts and Design, Courses in	194	Early Admission Program	21
Communication Arts and Design, Department of	192	Early Decision Plan Guidelines	11
Community Outreach Programs	373	Economics, Courses in	236
Community Programs, Office of	371	Economics, Department of	92, 227
Commuter Student Services	32	Economics, Minor in	93
Comparative Literature, Courses in	95	Education, Courses in	276
Computer Center, University	44	Education, School of	257
Computer Science, Courses in	118	Educational Studies, Division of	275
Computer Science, Minor in	117	Electrical Engineering Program	293
Computer Software Packages, Courses in	235	Electrical Engineering, Courses in	294
Computing and Communications Services, University	44	Emergency Medicine, Department of	321
Computing Services - Academic Campus, University	44	Endocrinology, Division of	325
Computing Services - MCV Campus, University	44	Endodontics	247
Consultation/Liaison Psychiatry, Division of	336	Endodontics, Courses in	253
Contact Information	v	Endodontics, Department of	252
Continuance in Academic Programs	56	Engineering, Courses in	287
Continuing Education	373	Engineering, School of	283
Continuous Enrollment	50	English Language Proficiency Requirements	374
Cooperative Education	372	English Language Program	374
Cooperative Education, Courses in	372	English, Courses in	95
Counseling Services, University	35	English, Department of	93
Course Abbreviations	51	English, Minor in	95
Course Information, General	50	Enrichment and Acceleration Opportunities	21
Course Interpretation	51	Environmental Studies, Center for	392
Course Numbering System	50	Environmental Studies, Courses in	100
Courses, Upper-Level	57	Environmental Studies, Minor and Certificate in	99
Crafts, Courses in	198	European Cultures, Courses in	102
Crafts, Department of	197	Evaluation and Final Grade Reports	53
Crafts, Minor in	198	Evaluation of Transfer Credit – Four-Year and Two-Year Institution Applicants	18
Credits, Total	57	Evening Studies	11
Criminal Justice, Courses in	91	Exit Counseling	58
Criminal Justice, Department of	90	Expenses and Financial Aid	23
Criminal Justice, Minor in	91	Family Practice, Department of	321
Critical Care Medicine, Division of	332	Fashion Design and Merchandising, Courses in	203
Dance and Choreography, Courses in	200	Fashion Design and Merchandising, Department of	202
Dance and Choreography, Department of	199	Fashion Merchandising, Minor in	203
Dance, Minor in	200	Fee Schedule	23
Dean's List	57	Fees and Expenses	23
Deans, Academic	377	Finance and Insurance/Risk Management, Courses in	237
Defense Crisis Tuition Relief, Refund, and Reinstatement Guidelines	25	Finance, Insurance, and Real Estate, Department of	227
Degree Options	58	Financial Aid	23, 26
Degree Programs, Undergraduate and Professional	5	Financial Aid and the University Bill	27
Degree Requirements for All Undergraduate Students	57	Food Service Facilities, Other	25
Degree Requirements, Regulations and General	49	Food Services	41
Degree-Seeking Student	9	Foreign Languages, Courses in	102
Dental Hygiene, Courses in	252	Foreign Languages, Department of	101

- Foreign Literature in English Translation,
 Courses in 103
- Foundations of Special Education, Minor in 275
- French, Courses in 103
- French, Minor in 102
- Freshman Undergraduate Admission Guidelines . . . 10
- Full-Time and Part-Time Students 52
- Gastroenterology, Division of 325, 332
- General and Trauma Surgery, Division of 339
- General Business, Courses in 238
- General Degree Requirements 49
- General Education Program, Undergraduate 6
- General Medicine and Primary Care, Division of . 325
- General Pediatrics and Emergency Care,
 Division of 332
- General Policy Governing Admissions and
 Enrollment 9
- General Practice Residency 249
- General Practice, Courses in 252
- General Practice, Department of 252
- General Studies, Bachelor of 371
- Genetics/Endocrinology/Metabolism, Division of . 332
- Geography, Courses in 149
- Geography, Minor in 149
- German, Courses in 104
- German, Minor in 102
- Gerontology, Department of 165
- Grade Exclusion Policy 55
- Grade Review Procedure 55
- Grade, Change of 55
- Grade-Point Average 54, 57
- Grades and Grade-Points 53
- Grading and Marking System 53
- Graduate Assistantships and Fellowships 28
- Graduate Research and Education, Division of . . 331
- Graduate School Program Admissions 9
- Graduate Students, Degree-Seeking 299
- Graduate Students, Nondegree-Seeking 299
- Graduate Studies, School of 299
- Graduating Financial Aid Recipients, Special
 Notes for 57
- Graduation Application 57
- Graduation Honors 57
- Health Administration, Department of 165
- Health Education or Physical Education,
 Minors in 268
- Health Education, Courses in 277
- Health Insurance 36
- Health Promotion 36
- Health, Physical Education, and Recreation,
 Division of 260
- Hematology/Oncology, Division of 326, 332
- History, Courses in 108
- History, Department of 107
- History, Minor in 108
- HIV/AIDS Center 391
- Honor Societies 33
- Honor System, VCU 38
- Honors 57
- Honors Program, University 61
- Honors, Courses in 62
- Housing and Residence Education, University . . . 37
- Human Genetics, Courses in 312
- Human Genetics, Department of 322
- Humanities and Sciences, College of 65
- Humanities and Sciences, Courses in 76
- Humanities and Sciences, Courses in College of . . 76
- Immigrants 375
- Immunization Requirements 36
- In-State Tuition Purposes, Determination of
 Student Classification for 383
- Infectious Diseases, Division of 326, 332
- Information Resources and Media 43
- Information Systems, Courses in 238
- Information Systems, Department of 228
- Information Technology, Office for 43
- Inpatient Psychiatry, Division of 336
- Instructional Development Center 43
- Intercollegiate Athletics 46
- Interdisciplinary Science, Courses in 140
- Interior Design, Courses in 205
- Interior Design, Department of 204
- Internal Medicine, Department of 323
- International and Area Studies Program 111
- International Programs, Center for 373
- International Student Admissions 13
- International Student and Scholar Services 373
- International Student Exchange Program
 (ISEP), Credits Earned through the 20
- International Student Recruitment and
 Admissions 374
- International Student Union and Student
 Activities 374
- International Studies Minor 112
- International Studies, Courses in 113
- Introduction to the University 6
- Italian, Courses in 105
- Judaic Studies, Minor in 124
- Language Skills, Courses in 99
- Last 25% Rule 57
- Latin American Studies Minor 112
- Latin, Courses in 105
- Law, Courses in 239
- Legal Medicine, Department of 327
- Library Services, University 45
- Linguistics, Courses in 98
- Liver Center 391
- Loan Repayment 26
- Mail Services 41
- Major Concentration 57
- Management, Courses in 239
- Management, Department of 230
- Maps, Campus 399
- Marketing and Business Law, Department of . . . 232
- Marketing, Courses in 240
- Marketing, Minor in 232
- Mass Communications, Courses in 78
- Mass Communications, School of 76
- Massey Cancer Center 327, 391
- Maternal Child Nursing, Department of 346
- Mathematical Sciences, Department of 114
- Mathematical Sciences, Minor in 117
- Mathematics, Courses in 119
- Mechanical Engineering Program 296
- Mechanical Engineering, Courses in 297
- Media Production Services 43

- Media Support Services44
- Medical College of Virginia Hospitals Authority3
- Medicinal Chemistry, Courses in358
- Medicinal Chemistry, Department of357
- Medicine, School of301
- Message from the Presidentxv
- Microbiology and Immunology, Courses in313
- Microbiology and Immunology, Department of327
- Military Science, Courses in123
- Military Science, Department of122
- Military Service and ROTC Courses20
- Minor Areas of Concentration58
- Minority Student Affairs, Office of39
- Minors63
- Mission of the University2
- Mission, MCV Campus3
- Molecular Diagnostics, Division of331
- Music Composition, Courses in213
- Music Education, Courses in213
- Music History, Literature and Theory, Courses in211
- Music, Department of206
- Music, Minor in207
- National Student Exchange (NSE), Credits
 Earned through the20
- Neonatal-Perinatal Medicine, Division of332
- Nephrology, Division of326, 332
- Network Services45
- Neuro-ophthalmology, Division of328
- Neuro-physiology, Division of328
- Neurology, Department of328
- Neuropathology, Division of331
- Neuroscience, Courses in314
- Neurosciences Center391
- Neurosurgery, Division of339
- New Student Programs, Office of39
- Nondegree-Seeking Special Student10
- Nonimmigrants374
- Nuclear Medicine, Division of338
- Nurse Anesthesia, Department of166
- Nursing Systems, Community and Psychiatric
 Mental Health Nursing, Department of347
- Nursing, Courses in347
- Nursing, School of341
- Obstetrics and Gynecology, Department of328
- Occupational Therapy, Courses in170
- Occupational Therapy, Department of166
- Off-Campus Programs371
- online@VCU42
- Ophthalmology, Department of329
- Oral and Craniofacial Molecular Biology,
 Institute for393
- Oral and Maxillofacial Surgery248
- Oral and Maxillofacial Surgery, Department of253
- Oral Pathology, Courses in253
- Oral Pathology, Department of253
- Oral Surgery, Courses in253
- Orientation17
- Orthodontics248
- Orthodontics, Courses in254
- Orthodontics, Department of253
- Orthopaedic Surgery, Department of329
- Otolaryngology, Department of330
- Outcomes Research, Institute for393
- Overload52
- Painting and Printmaking, Courses in214
- Painting and Printmaking, Department of214
- Painting and Printmaking, Minor in214
- Parking and Transportation Services41
- Pathology, Courses in314
- Pathology, Department of330
- Pathways63
- Patient Counseling, Program of171
- Pediatric Cardiology, Division of332
- Pediatric Dentistry248
- Pediatric Dentistry, Courses in254
- Pediatric Dentistry, Department of254
- Pediatric Pulmonology, Division of332
- Pediatric Surgery, Division of339
- Pediatrics, Department of331
- Periodontics249
- Periodontics, Courses in254
- Periodontics, Department of254
- Pharmacology and Toxicology, Courses in315
- Pharmacology and Toxicology, Department of333
- Pharmacy and Pharmaceutics, Courses in360
- Pharmacy and Pharmaceutics, Department of359
- Pharmacy, School of349
- Philosophy and Religious Studies, Department of123
- Philosophy of Law, Minor in124
- Philosophy, Courses in124
- Philosophy, Minor in124
- Photography and Film, Courses in216
- Photography and Film, Department of216
- Photography and Film, Minor in216
- Physical Education, Courses in278
- Physical Medicine and Rehabilitation,
 Department of333
- Physical Therapy, Department of171
- Physics, Courses in129
- Physics, Department of127
- Physics, Minor in129
- Physiology, Courses in314
- Physiology, Department of334
- Plastic and Reconstructive Surgery, Division of339
- Policies and Procedures, University38
- Political Science and Public Administration,
 Department of130
- Political Science, Courses in132
- Political Science, Minor in131
- Portuguese, Courses in105
- Post-Admission Advising17
- Post-Baccalaureate Certificate Programs62
- Post-Master's Certificate Programs63
- Preparation for Professional Studies in Law157
- Preparation for Professional Studies in the
 Health Sciences152
- Preparation for the Study of Clinical
 Laboratory Sciences154
- Preparation for the Study of Dental Hygiene154
- Preparation for the Study of Law233
- Preparation for the Study of Medicine and
 Dentistry Pre-Medicine and Pre-Dentistry153
- Preparation for the Study of Nursing154
- Preparation for the Study of Occupational Therapy155
- Preparation for the Study of Optometry153
- Preparation for the Study of Pharmacy155

- Preparation for the Study of Physical Therapy . . . 156
 Preparation for the Study of Radiation Sciences . . 157
 Preparation for the Study of Veterinary Medicine . . 153
 Preventive Medicine and Community Health,
 Courses in 317
 Preventive Medicine and Community Health,
 Department of 334
 Printing Services 42
 Prosthodontics 249
 Prosthodontics, Courses in 254
 Prosthodontics, Department of 254
 Psychiatric and Behavioral Genetics, Institute for . . 392
 Psychiatry, Department of 335
 Psychology, Courses in 136
 Psychology, Department of 134
 Psychology, Minor in 136
 Public Management, Minor in 132, 148
 Public Policy, Center for 392
 Pulmonary, Division of 326
 Quality Assurance 27
 Quality Health Care, Division of 326
 Radiation Oncology, Department of 337
 Radiation Physics and Biology, Division of 338
 Radiation Sciences, Department of 172
 Radiology Education, Division of 338
 Radiology, Department of 337
 Reading and Study Skills, Courses in 281
 Readmission Guidelines 13
 Real Estate, Courses in 241
 Recreation, Courses in 280
 Recreation, Parks and Tourism, Minor in 268
 Recreational Sports 37, 47
 Refunds 25
 Registration Policies 52
 Registration, Cancellation of 52
 Registration, Change in 52
 Registration, Concurrent 52
 Regulations and General Degree Requirements . . . 49
 Rehabilitation Counseling, Department of 177
 Rehabilitation Research, Division of 334
 Rehabilitation Services 63
 Rehabilitation Services, Courses in 177
 Reinstatement 26
 Religious Observances 49
 Religious Studies, Courses in 126
 Religious Studies, Minor in 124
 Repeated Courses 55
 Resources and Services, University 41
 Responding to the Offer of Admission 16
 Retail Stores 42
 Rheumatology, Allergy and Immunology,
 Division of 326
 Rights of Student Under the Family Educational
 Rights and Privacy Act 381
 Room and Board Fees 24
 Room Rent 24
 Russian Area Studies Minor 112
 Russian, Courses in 105
 Science, Environmental Concentration in
 Bachelor of Science in 100
 Science, Interdisciplinary Degree Program in . . . 138
 Sculpture, Courses in 217
 Sculpture, Department of 217
 Sculpture, Minor in 217
 Second Baccalaureate Degree 58
 Senior Citizens Higher Education Programs 20
 Service and Financial Aid Appeals 27
 Sexual Assault/Substance Abuse Education
 Programs 37
 Social Science, Courses in 140
 Social Sciences 140
 Social Welfare, Minor in 367
 Social Work, Courses in 368
 Social Work, School of 365
 Sociology and Anthropology, Department of 140
 Sociology, Courses in 144
 Sociology, Minor in 142
 Spanish, Courses in 106
 Spanish, Minor in 102
 Special Academic Programs and Services 61
 Special Fee Charges 24
 Special Student Guidelines 11
 Special Students 372
 Speech, Courses in 220
 State policy on transfer agreement between
 Virginia Community Colleges and Richard
 Bland College 12
 Statistics, Courses in 121
 Statistics, Minor in 117
 Structural Biology and Drug Discovery,
 Institute for 392
 Student Academic Support Services,
 MCV Campus 39
 Student Accounting 26
 Student Activities Center 33
 Student Activity Fee 24
 Student Affairs, Division of 31
 Student and University Governance 34
 Student Billing 25
 Student Classification for In-State Tuition
 Purposes, Determination of 383
 Student Conduct in the Classroom 49
 Student Financial Responsibility, Statement of . . . 26
 Student Government Association, MCV Campus . . 34
 Student Government Association Fee 24
 Student Health Fee 24
 Student Health Services, University 35
 Student Load 52
 Student Media (Academic Campus) 34
 Student Refund/Financial Aid Repayment Policy . . 28
 Student-Athlete Advising, Office of 46
 Study Abroad 27, 373
 Substance Abuse Medicine, Division of 327
 Summer Studies 27, 371
 Surgery, Department of 338
 Surgical Oncology, Division of 339
 Surgical Pathology, Division of 331
 Teacher Education, Division of 268
 Telecommunications Services 45
 Termination of Enrollment 56
 Theatre, Courses in 220
 Theatre, Department of 218
 Transcripts 56
 Transfer Admission Guidelines 12
 Transfer Module 397
 Transplant Surgery, Division of 340

Tuition and Fee Charges . . . . .	.23
Tuition Determination and Student Classification . . .	.23
Undeclared Program, Humanities and Sciences . . . .	.74
Undergraduate Application Deadlines . . . . .	.16
Undergraduate Credit by Examination . . . . .	.19
University Board Plan . . . . .	.24
University Centers and Institutes . . . . .	.391
University Community, The . . . . .	.1
University Fee . . . . .	.24
University Honors Program, Admission to the . . . .	.14
University Outreach, Division of . . . . .	.371
University Student Commons and Activities, Academic Campus . . . . .	.32
University Studies, Course in . . . . .	.76
Urban Studies and Planning, Courses in . . . . .	.150
Urban Studies and Planning, Department of . . . .	.146
Urban Studies, Minor in . . . . .	.149
Urology, Division of . . . . .	.340
Vascular Surgery, Division of . . . . .	.340
<i>VCU OneCard</i> . . . . .	.45
Veteran and Reservist Educational Benefits . . . . .	.29
Veterans Administration Medical Center, Division of . . . . .	.340
<i>Vine, The</i> . . . . .	.34
Virginia Commonwealth University . . . . .	.1
Virginia War Orphans Education Program . . . . .	.29
WCVW . . . . .	.34
Withdrawal from the University . . . . .	.52
Women's Studies, Courses in . . . . .	.151
Women's Studies, Minor in . . . . .	.151
<i>Writers' Corner</i> . . . . .	.34
Writing, Minor in . . . . .	.95