

1976

University of Maine at Orono Catalog for 1976-77, 1977-78, part 1

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UNIVERSITY
OF MAINE
AT ORONO

Catalog for 1976-77
1977-78

UNIVERSITY OF MAINE
BULLETIN
Orono, Maine 04473

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Number 3

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ACADEMIC YEARS

INFORMATION IN THIS CATALOG COVERS 1976-77 and 1977-78

The information contained in this catalog covers rules, regulations, curricula, and programs for the 1976-77 and 1977-78 academic years. The University reserves the right to make changes at any time.

APPROVED CALENDAR FOR 1976-77

ORONO CAMPUS

FALL SEMESTER

Registration for all students who have not completed it by mail	Tues.—8 a.m.-3:30 p.m.	Sept.	7
Classes begin	Wed.—8 a.m.	Sept.	8
End of 1st five weeks (for withdrawals)	Wed.—4:30 p.m.	Oct.	13
Midsemester reports due (covering first ½ semester)	Wed.—4:30 p.m.	Oct.	27
Registration for Spring Semester 1977	Mon.-Fri.	Nov.	15-19
End of 2nd five weeks (for withdrawals)	Wed.—4:30 p.m.	Nov.	17
Thanksgiving recess begins	Wed.—8 a.m.	Nov.	24
Classes resume	Mon.—8 a.m.	Nov.	29
Graduate theses due	Fri.—4:30 p.m.	Dec.	10
Classes end	Sat.—12 noon	Dec.	18
Final exams begin	Mon.—8 a.m.	Dec.	20
Final exams end	Thurs.—12 noon	Dec.	23

SPRING SEMESTER 1977

Registration for all students who have not previously registered	Sat.—8 a.m.-3:30 p.m.	Jan.	22
Classes begin	Mon.—8 a.m.	Jan.	24
End of 1st five weeks (for withdrawals)	Fri.—4:30 p.m.	Feb.	25
Midsemester reports due (covering first 4 semester)	Fri.—4:30 p.m.	Mar.	18
Spring recess begins	Sat.—12 noon	Mar.	19
Classes resume	Mon.—8 a.m.	Mar.	28
End of 2nd five weeks (for withdrawals)	Fri.—4:30 p.m.	Apr.	8
Graduate theses due	Fri.—4:30 p.m.	May	6
Classes end	Sat.—12 noon	May	14
Final exams begin	Mon.—8 a.m.	May	16
Final exams end	Fri.—12 noon	May	20
Class Day	to be announced		
Commencement (tentative)	Sat.	May	21

SUMMER CAMP

Forestry (tentative) Start—Mon., May 23 End—Sat., July 2

SUMMER SESSIONS

Three-week sessions (tentative)	Start—Mon., May 23 End—Fri., June 10		
	Mon., June 20 Fri., July 8		
	Mon., July 11 Fri., July 29		
	Mon., Aug. 1 Fri., Aug. 19		
Six-week sessions (tentative)	Start—Mon., June 20 End—Fri., July 29		
	Mon., July 11 Fri., Aug. 19		
Eight-week Evening session (tentative)	Start—Mon., June 20 End—Fri., Aug. 12		
Associate and baccalaureate degree requests for August commencement due in Registrar's Office	Fri.—12 noon	July	15
Graduate theses due (tentative)	Fri.—4:30 p.m.	Aug.	12
Commencement exercises (tentative)	Fri.—7:45 p.m.	Aug.	19

September

S	M	T	W	T	F	S
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October

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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

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December

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January

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February

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27	28					

March

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April

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May

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31						

BOARD OF TRUSTEES

- | | |
|---|---|
| James H. Page
Term Expires May 26, 1981 | 307 Maine Street, Caribou, 04736 |
| Stanley J. Evans, M.D.
Term Expires May 26, 1981 | 336 Mt. Hope Avenue
Bangor 04401 |
| Francis A. Brown
Term Expires May 26, 1980 | 143 Main Street, Calais 04619 |
| Bernard Carpenter
Term expires May 26, 1980 | Bates College
Lewiston 04240 |
| John C. Donovan
Term expires June 28, 1979 | Hubbard Hall, Bowdoin College
Brunswick 04011 |
| Susan R. Kominsky
Term expires May 26, 1980 | One Merchants Plaza
Bangor 04401 |
| Robert R. Masterton
Term expires May 26, 1978 | Maine Savings Bank
One Maine Savings Plaza, Portland 04101 |
| H. Sawin Millett, ex officio | State House, Augusta 04333 |
| Thomas Monaghan
Term expires May 26, 1983 | 415 Congress Street
Portland 04102 |
| Cynthia A. Murray-Beliveau
Term expires October 21, 1977 | Box 125
Wayne 04284 |
| Kenneth H. Ramage
Term expires October 20, 1978 | Paradise Street, Bethel 04217 |
| Carlton D. Reed, Jr.
Term expires August 8, 1977 | Day's Ferry, Woolwich 04579 |
| Elizabeth S. Russell
Term Expires May 26, 1982 | The Jackson Laboratory
Bar Harbor 04609 |
| Artemus E. Weatherbee
Term expires May 26, 1982 | 14 Constitution Road
Kennebunk 04043 |
| Nils Y. Wessell
Term expires October 20, 1978 | 630 5th Avenue, Room 2550
New York, N.Y. 10020 |

OFFICERS OF ADMINISTRATION*
OFFICERS OF THE UNIVERSITY OF MAINE AT ORONO

Chancellor—Patrick E. McCarthy.

President—Howard R. Neville, Alumni Hall.

Vice President for Academic Affairs—James M. Clark, Alumni Hall.

Vice President for Student Affairs—Arthur M. Kaplan, Fernald Hall.

Vice President for Finance and Administration—John M. Blake, Alumni Hall.

Vice President for Research and Public Service—Frederick E. Hutchinson, Coburn Hall.

Business Manager and Assistant to the Treasurer—Alden E. Stuart, Alumni Hall.

University Librarian—James C. MacCampbell, Fogler Library.

Registrar—John F. Collins, Wingate Hall.

Director of Admissions—James A. Harmon, Alumni Hall.

Director of Career Planning and Placement—Adrian Sewall, Wingate Hall.

Director of Counseling Center—Charles O. Grant, Fernald Hall.

Director of Cooperative Extension Service—Edwin H. Bates, 101 Winslow Hall.

Director of Development—Harold L. Chute, North Hall Alumni Center.

Director of Engineering Services—William R. Johansen, 120 Service Building.

Director of Equal Employment Opportunity—JoAnn M. Fritsche, 259 Aubert.

Director of Institutional Research—Anita Wihry, Alumni Hall.

Director of Memorial Union and Arthur A. Hauck Auditorium—David M. Rand, Memorial Union.

Director of Physical Plant—Alan D. Lewis, 113 Service Building.

Director of Public Information and Central Services—Leonard N. Harlow, PICS Building.

Director of Purchases—Murray R. Billington, Service Building.

Director of Residence and Dining Halls—H. Ross Moriarty, Wells Commons.

Director of Student Aid and Coordinator of Admissions and Student Aid—John E. Madigan, Wingate Hall.

Director of Student Health Center—Dr. Robert A. Graves, Cutler Health Center.

Executive Director, General Alumni Association—Lester Nadeau, Alumni Center.

*A complete list of teaching personnel is given in the back of this catalog.

OFFICERS OF DIVISIONS OF THE UNIVERSITY

College of Arts and Sciences—Gordon A. Haaland, Dean, 100 Stevens Hall.

School of Performing Arts—Robert C. Godwin, Director, 125 Lord Hall.

College of Business Administration—W. Stanley Devino, Dean, 8 Stevens Hall, South.

College of Education—James J. Muro, Dean, 151 Shibles Hall.

College of Life Sciences and Agriculture—Kenneth E. Wing, Dean, 16 Winslow Hall.

School of Forest Resources—Fred B. Knight, Director, Nutting Hall.

School of Human Development—Margaret E. Thornbury, Director, 24 Merrill Hall.

Technical Institute Division, Robert B. Rhoads, Director, 6 Winslow Hall.

- College of Engineering and Science—Basil R. Myers, Dean, 101 Barrows Hall.
School of Engineering Technology—William R. Gorrill, Director, East Annex.
- Bangor Community College—Constance H. Carlson, Dean, 205 Auburn Hall.
- Graduate School—Roderick A. Forsgren, Acting Dean, Winslow Hall.
- Summer Session—Edward W. Hackett, Jr., Director, 14 Merrill Hall.
- Cooperative Extension Service—Edwin H. Bates, Director, 100 Winslow Hall.
- Maine Life Sciences and Agricultural Experiment Station—Kenneth E. Wing, Director, 105 Winslow Hall.
- Maine Technology Experiment Station—Basil R. Myers, 101 Barrows Hall.
- Department of Industrial Cooperation—Richard C. Hill, Director, 110 Boardman Hall.

OFFICERS OF THE DEPARTMENTS

- Agricultural Engineering—Professor Norman Smith, 2 Agricultural Engineering Building.
- Agricultural and Resource Economics—Professor Johannes Delphendahl, 206 Winslow Hall.
- Animal and Veterinary Sciences—Professor John Wolford, 134 Hitchner Hall.
- Anthropology—Professor Richard G. Emerick, 52 South Stevens.
- Art—Associate Professor Michael H. Lewis, 104 Carnegie Hall.
- Biochemistry—Professor Frederick H. Radke, 227 Hitchner Hall.
- Botany and Plant Pathology—Professor Douglas A. Gelinis, 313 Deering Hall.
- Chemical Engineering—Professor Arthur L. Fricke, 115 Jenness.
- Chemistry—Professor Oscar E. Weigang, Jr., 285 Aubert Hall.
- Civil Engineering—Professor Wayne A. Hamilton, 103 Boardman Hall.
- Economics—Associate Professor David F. Wihry, 215B Stevens.
- Electrical Engineering—Professor Richard C. Gibson, 111 Barrows Hall.
- Engineering Technology—Professor William R. Gorrill, Director, 122 East Annex.
- English—Associate Professor Ulrich Wicks, 304A Eng/Math Bldg.
- Entomology—Professor John B. Dimond, 306 Deering Hall.
- Food Science—Professor John M. Hogan, 202C Holmes Hall.
- Foreign Languages and Classics—Associate Professor Paulette French, 201A Little Hall.
- Forest Resources—Director Fred B. Knight, Nutting Hall.
- Geological Sciences—Professor Bradford Hall, 111 Boardman Hall.
- History—Professor William H. Jeffrey, 170 Stevens Hall.
- Human Development—Director Margaret E. Thornbury, 24 Merrill Hall.
- Journalism—Assistant Professor Arthur O. Guesman, 101B Lord Hall.
- Mathematics—Professor John C. Mairhuber, 333A Eng/Math Bldg.
- Mechanical Engineering—Professor John R. Lyman, 209 Boardman Hall.
- Microbiology—Professor Darrell B. Pratt, 258 Hitchner Hall.

Military Science—Lt. Col. Anton F. Mayer, Armory.

Performing Arts—Professor Robert C. Godwin, 125 Lord Hall.

Philosophy—Professor Erling R. Skorpen, The Maples.

Physical Education and Athletics—Professor Harold S. Westerman, Memorial Gymnasium.

Physics—Professor Henry O. Hooper, 120 Clarence E. Bennett Hall.

Plant and Soil Sciences—Professor Rollin C. Glenn, 105 Deering Hall.

Political Science—Associate Professor Roy W. Shin, 27 Stevens Hall, North.

Psychology—Associate Professor Roger B. Frey, 301A Little Hall.

Sociology—Associate Professor Carleton S. Guptill, 221 East Annex.

Speech Communication—Associate Professor Dwayne D. VanRheenen, 315 Stevens Hall.

Technical Institute Division, Robert B. Rhoads, Director, 6 Winslow Hall.

Zoology—Professor Franklin L. Roberts, 100 Murray Hall.

CORRESPONDENCE

Inquiries should be directed as indicated below:

General administrative matters	President, Howard R. Neville
Scholarship records	Registrar, John F. Collins
Admission to the freshman class and to advanced standing (Orono)	Director of Admissions, James A. Harmon
(Bangor)	Director of Admissions and Counseling, Joseph M. Fox
Financial affairs of students	Business Manager, Alden E. Stuart
College of Arts and Sciences	Gordon A. Haaland, Dean of the College
College of Business Administration	Dean of the College, William S. Devino
College of Education	Dean of the College, James J. Muro
College of Life Sciences and Agriculture	Dean of the College, Kenneth E. Wing
College of Engineering and Science	Dean of the College, Basil R. Myers
Bangor Community College	Dean of the College, Constance H. Carlson
Graduate School and Scholarships available for graduate students	Acting Dean of Graduate School, Roderick A. Forsgren
Summer Session	Director Edward W. Hackett, Jr.
Continuing education courses	Continuing Education Division, Director, Edward W. Hackett, Jr.
Senior and alumni placement	Placement Director, Adrian Sewall
Financial assistance	Director of Student Aid, John E. Madigan
Dormitory rooms for women	Manager, Women's Housing, Erna D. Wentworth
Dormitory rooms for men, rooms in private homes, and apartments	Housing Coordinator, Vernon C. Elsemore
Foreign students	John E. Madigan, Adviser
Conferences and conventions	John R. Benoit, Conference Coordinator

UNIVERSITY OF MAINE SYSTEM

The University of Maine is a statewide system of public institutions of higher education. It is operated by a single Board of Trustees, which is appointed by the Governor. The chief academic and administrative officer for the system is the Chancellor, who is responsible to the Board of Trustees.

The system has University centers at Orono and Portland-Gorham, four-year colleges at Fort Kent, Presque Isle, Machias, and Farmington, and operates a community college at Augusta.

The University of Maine at Orono includes the Colleges of Arts and Sciences, Business Administration, Education, Engineering and Science, Life Sciences and Agriculture, Bangor Community College, and the Graduate School.



General Information

The information in this catalog pertains only to the activities and programs at Orono and Bangor.

The University of Maine at Orono is located about halfway between Kittery, the most southerly town in the state, and Fort Kent on the northern boundary. It is on U. S. Route 2A, approximately eight miles from Bangor, the third largest city of the state. The University campus is about a mile from the business section of Orono, an attractive town of about 10,000 population, and borders the Stillwater River, a branch of the Penobscot.

History—The University at Orono was established originally as the State College of Agriculture and the Mechanic Arts under the provisions of the Morrill Act, approved by President Lincoln in 1862. The next year the State of Maine accepted the conditions of the Act and in 1865 created a corporation to administer the affairs of the college. The original name was changed to the University of Maine in 1897.

The institution opened September 21, 1868, with 12 students and two faculty members. Dr. Merritt Caldwell Fernald was appointed acting president. By 1871 curricula had been arranged in agriculture, civil engineering, mechanical engineering, and elective. From these curricula the Colleges of Agriculture, Technology, and Arts and Sciences gradually developed. Women have been admitted since 1872. The School of Education was established in 1930 and became the College of Education in 1958. The University operated a College of Law from 1898 to 1920. After this unit was discontinued in 1920, the University did not offer law courses until 1961 when a School of Law, located in Portland, was added through a merger with Portland University.

Schools of Business Administration, Forestry, Home Economics (now Human Development), and Nursing were established in 1958. The School of Business Administration became the College of Business Administration in 1965. The University of Maine at Bangor became the University's sixth college in 1974 when it was renamed Bangor Community College. Schools of Engineering Technology and Performing Arts were established in 1975.

The Maine Agricultural Experiment Station was established as a division of the University by act of the Legislature of 1887, as a result of the passage by Congress of the Hatch Act. It succeeded the Maine Fertilizer Control and Agricultural Experiment Station, which had been established in 1885.

Graduate instruction has been given by various departments for many years. The first master's degree was conferred in 1881 and the first doctor's degree in 1960. Since 1923 graduate work has been a separate division in the charge of a dean.

Beginning in 1895, a Summer Session has usually been held each year. The former six-week program was extended to nine weeks in 1961 and to 12 weeks in 1962. This session is designed for teachers, school administrators, and for college students who desire to accelerate their work.

The institution has been served by the following presidents: The Rev. Charles Frederick Allen, Dr. Merritt Caldwell Fernald, Dr. Abram Winegardner Harris, Dr. George Emory Fellows, Dr. Robert Judson Aley, Dr. Clarence Cook Little, Dr. Harold Sherburne Boardman, Dr. Arthur Andrew Hauck, Dr. Lloyd H. Elliott, Dr. Edwin Young, and Dr. Winthrop C. Libby.

Policy Statement—It is the policy of the University of Maine at Orono and Bangor that no discrimination on the grounds of race, color, religion, sex, or national origin will exist in any area of the university. The University's policy includes, but is not limited to, the requirements of Federal Executive Orders 11246 and 11375, as amended, Titles VI and VII of the Civil Rights Act, as amended, and Title IX of the Higher Education Act of 1972.

Organizations of the University—The University is controlled by a 15-member Board of Trustees. The Board of Trustees has supreme authority in all matters pertaining to the University, and all policies applying to the University as a whole must be approved by the board. Administrative units of the University of Maine at Orono include the College of Arts and Sciences, Life Sciences and Agriculture, Business Administration, Education, Engineering and Science, and Bangor Community College; Graduate School, Summer Session, Office of Research and Public Service, Cooperative Extension Service, Maine Agricultural Experiment Station, Maine Technology Experiment Station, Continuing Education Division, and Department of Industrial Cooperation. Each division regulates those affairs which concern itself alone.

The College of Arts and Sciences offers curricula leading to the four-year degree of bachelor of arts in the following fields of academic study: Anthropology, Art, Biology, Chemistry, Computer Science, Economics, English, French, Geological Sciences, German, History,

International Affairs, Journalism, Latin, Mathematics, Medical Technology, Modern Languages, Performing Arts (Broadcasting/Film, Music, and Theatre), Philosophy, Physics, Political Science, Psychology, Public Management, Romance Languages, Sociology, Spanish, Speech Communication, and Zoology. Double majors are also possible. A limited number of students are allowed to design their own curriculum with the approval of the Bachelor of Arts in Special Studies Committee.

Specialized curricula which involve major work in more than one academic field is offered for those students who wish to prepare for specific vocational or professional work in industry, foreign service, medicine, medical technology, law, social welfare, public management, fishery science and marine biology.

A major program is offered in the School of Nursing at the University of Maine at Portland/Gorham campus leading to the degree of bachelor of science. The first two years may be taken on the Orono campus.

The College of Business Administration offers professional training in business subjects complemented by course requirements in the arts, humanities, social sciences, and mathematics. The degree of bachelor of science is awarded to those who successfully complete the requirements with a major concentration in accounting, finance, management, or marketing.

Bangor Community College offers associate degree programs in General Studies, Liberal Studies, Law Enforcement, Mental Health Technology, Human Services, Dental Hygiene and a one-year certificate program in Law Enforcement. In addition, approximately 50 special students from Eastern Maine Medical Center's nursing program take two semesters of academic credit on the BCC campus. There is an open admissions policy to the college. However, the career programs necessarily have individual requirements.

The College of Education offers during the academic year professional training for prospective elementary and secondary school teachers, principals, guidance counselors, physical education instructors, administration of recreation and park programs, and supervisors and teachers of art and music. Alternative career options in the following areas may be included: Special Education, Child Care, Child Advocacy, Community Service, Day Care Center and Substance Abuse. The degree of bachelor of science in education is given to those who have successfully completed the requirements for the degree. Appropriate work taken through the Summer Session and Continuing Education Division may likewise be applied to the requirements for the degree.

The College of Engineering and Science offers baccalaureate degree programs in Agricultural Engineering (jointly with the College of Life Sciences and Agriculture), Chemical Engineering, Pulp and Paper Technology, Chemistry, Civil Engineering, Electrical Engineering, Electrical Engineering Technology, Engineering Physics, Mechanical Engineering, Mechanical Engineering Technology and Survey Engineering. Post-baccalaureate programs leading to a certificate are available in Pulp and Paper Management. Associate degree programs are also offered in the School of Engineering Technology of the college in Chemical Engineering (Pulp and Paper) Technology, Civil Engineering Technology, Electrical Engineering Technology and in Mechanical Engineering Technology.

The College of Life Sciences and Agriculture offers programs leading to the bachelor of science degree in the following fields: Agricultural and Resource Economics, Agricultural Engineering, (jointly with the College of Engineering and Science), Agricultural Mechanization, Forest Engineering (jointly with the School of Forest Resources), Animal and Veterinary Sciences, Microbiology, Biochemistry, Biology, Botany, Entomology, Forestry, Human Development (Food and Nutrition, Child Development, Home Economics Education, and Health and Family Life Education), Natural Resource Management, Plant and Soil Sciences, Recreation and Park Management (jointly with the College of Education), and Wildlife Management. Minor programs of study are available in Biology Education, Agricultural Science, Agricultural and Conservation Education, International Agricultural Development, Food Science, Journalism, Rural Sociology, Chemistry, Mathematics, Geology, Plant Science, and Botany. It also offers preprofessional programs in Veterinary Science, Dairy Manufacturing, and Food Processing. Two-year technical training programs leading to an associate of science degree are offered in Animal Medical Technology, Animal Agriculture Technology, Forest Management, Merchandising, Plant and Soil Technology (Landscape and Nursery Management), and Resource and Business Management (with options in Agricultural Business Management, Food Industry Management, and Resource Management).

The Graduate School offers programs of study leading to the degrees of Master of Arts, Master of Science, Master of Engineering, Master of Arts (Teaching of Foreign Languages), Master of Education, Certificate of Advanced Study, Master of Business Administration, Master of Mechanical Engineering, Master of Music, Master of Professional Studies, Master of Public Administration, Doctor of Philosophy and Doctor of Education. Programs leading to

the Ph.D. degree are available in animal nutrition, chemical engineering, chemistry, civil engineering, forest resources, history, oceanography, physics, plant science, general and experimental psychology, clinical psychology, and zoology. Doctor of Education programs are available in guidance and counseling, in the language arts, in social studies education and in science education.

The Continuing Education Division (CED) provides a source of continuing education for mature and qualified persons who wish to supplement an earlier education. A variety of degree credit courses, non-degree credit courses, and special short courses, are available in the late afternoon, in the evening and on Saturday. Courses offered by means of the Division may be for degree credit or for non-degree credit.

Students in CED classes have many varied backgrounds and interests. Most of them carry on full-time occupations, have graduated from high school some time ago, and have determined for themselves the need for earning a degree or for specific courses to be used for personal or occupational development. The programs offered are designed to prepare adults to meet the challenge of change in today's world, to provide experiences in learning which will lead to fuller and richer life, and give people of Maine an opportunity for life-long continuing education.

The Summer Session offers a wide variety of courses designed to meet the needs of educators, regularly enrolled college students, and those who seek cultural and professional growth in specific fields.

Teachers, counselors, supervisors, and school administrators will find that this 9-week period of study provides an unusual opportunity for professional improvement. Workshops, conferences, and seminars specially designed for those engaged in the education professions are offered.

Regularly enrolled students of the University of Maine and other collegiate institutions likewise find an opportunity to accelerate their undergraduate programs, to make up work that they may have missed during the regular school year, or to secure additional credits in anticipation of their individual needs.

Adults not engaged in formal degree study or teaching who desire to attend the session for general purposes may do so providing all prerequisites, if any, are met.

TRIGOM—The University of Maine at Orono is a charter member of the The Research Institute of the Gulf of Maine (TRIGOM). This is a nonprofit cooperation established as a consortium to carry out research and projects related to oceanography. UMO also is a member of a Canadian consortium which gives it access to The Huntsman Laboratory in New Brunswick.

CANADIAN-AMERICAN CENTER—The Canadian-American Center, formerly the NEAPQ Center, is located in Canada House at 160 College Avenue. The Center coordinates Canadian Studies on the Orono campus; administers the Canada Year program; and promotes student and faculty exchanges with Canadian universities. For information on graduate and undergraduate programs in Canadian Studies, contact the director, Ronald D. Tallman.

Office of Research and Public Services—This office has the responsibility for planning, coordinating and administering the programs of research and public services of the University of Maine at Orono. The objective is accomplished through procedures designed to:

- A. Coordinate the research and public service efforts of the colleges and other units of UMO with the goal of developing effective interrelationships between staffs, functions and projects.
- B. Develop long-range goals and objectives for the research and public service programs of UMO and provide faculty and staff members with the opportunity to contribute to planning, establishing and implementing such goals.
- C. Provide increased opportunity for faculty and staff members to participate in programs of research and public service by promoting multidisciplinary and interdisciplinary approaches to solving identified problems. Comprehensive and timely information on grant support is made available on a continuing basis. Organized research and public service units at UMO include the following:

The Maine Life Sciences and Agricultural Experiment Station maintains its offices and principal laboratories at Orono. Experiment farms include Highmoor Farm at Monmouth, Aroostook Farm at Presque Isle, Chapman Farm at Chapman, and Blueberry Farm at Jonesboro.

The Maine Technology Experiment Station, established in 1915, makes investigations for various state and municipal departments, and on request furnishes scientific information to industries. The station maintains offices and laboratories in Boardman Hall.

The Department of Industrial Cooperation (DIC), a part of the Office of Research and Public Services, coordinates the work of the University in contract agreements with state and industrial organizations. The Department is located in Boardman Hall.

The Cooperative Extension Service is an educational agency representing the University of Maine and the U.S. Department of Agriculture. Educational and informational assistance in a broad range of subjects is provided to individuals, families and organized groups in rural and urban areas of the state.

County Extension Associations are the sponsoring organizations of the Extension program in each county. They function under the leadership of an executive committee with the assistance of local community leaders.

Extension Service personnel include state and area specialists, administrative staff, and Extension agents. The latter, who make up the major part of the staff, are located in each county, usually at the county seat, and carry out work with the assistance of specialists in agriculture, home economics, 4-H and other youth education, and resource development. Extension agents also provide general information about other programs and services of the University of Maine, the U.S. Department of Agriculture and other agencies serving the people of Maine.

Maine Technical Service Program assists business and industry to acquire and use scientific and engineering information more effectively.

The Bureau of Labor Education conducts programs for union and non-union employee groups covering most requested subjects, but focused on effective employee organization practices and community participation.

The Bureau of Public Administration provides in-service training for Maine municipal and state government officials, does research in areas of interest to such officials and otherwise supplies information on these and related activities to persons engaged or interested in government.

Title I HEA provides federal matching funds to encourage and support public and private universities, colleges, and junior colleges to use their facilities and personnel, through research and teaching, to help solve problems of community living with emphasis on new concepts, approaches, and programs.

The Office of Sponsored Programs provides assistance to faculty and staff in developing proposals and seeking outside funding for research, instruction, and service projects. The office, with headquarters in Coburn Hall, provides liaison with federal funding agencies and private foundations.

New England Center for Continuing Education is a consortium of the six state universities established for the purpose of focusing the resources of institutions of higher education on common problems in the region. Workshops, institutes, conferences and other informal study programs—ranging from one day to several weeks—are sponsored throughout the year. The University of Maine has a special responsibility in the field of resource development.

The Faculty Research Fund—The University Trustees have set aside two permanent funds—the Dr. Thomas U. Coe Fund, \$123,000, and the William H. Weppeler Fund for Faculty Research, \$168,000—the income to be used each year by the faculty for carrying on any scholarly activity. From time to time some additional funds are made available to the Faculty Research Funds Committee for the same purpose. This committee meets three times a year. Applications for grants from these funds should be addressed to the Secretary, Faculty Research Funds Committee.

Faculty Summer Research Grants—A program of support to provide a limited number of grants to underwrite faculty research projects during the summer. Recipients are selected on the basis of information supplied in a proposal which explains the research project to be conducted during the period for which the grant is made. The Research Funds Committee serves as a screening committee to evaluate the proposals. Application information may be obtained from the Secretary, Faculty Research Funds Committee.

The Center for Environmental Studies was created in 1970 at the University of Maine at Orono to encourage and promote university interest in and interdisciplinary cooperation in environmental research, teaching, and public service, including physical, biological, and social aspects.

The Land and Water Resources Center stimulates and coordinates the research, training, and educational activities in water resource disciplines, including select aspects of soils and lands. Information and education services include sponsorship of seminars, forums and workshops. The Center is advised by a body of civic leaders, scientists and administrators representing four companies, four universities, three service organizations, 10 state agencies, and five federal agencies.

The Ira C. Darling Center for Research, Teaching and Service is the Marine Laboratory of the University of Maine at Orono. Located on Wentworth Point on the Damariscotta River in Walpole, Maine, the Darling Center has approximately 10,000 square feet of laboratory space available for faculty and graduate marine research. Dormitory space accommodates 12 year-round staff members. Summer quarters are available for an additional 16. A steel and concrete pier provides access by vessels drawing up to 15 feet. A 34-foot, diesel-powered workboat, a 34-foot, diesel-powered research catamaran, and a number of outboard boats are used for inshore and nearshore field work. Through cooperative arrangements with other institutions, faculty and students have access to offshore and open ocean areas. The library, a branch of the Fogler Library at Orono, contains several thousand volumes and an extensive reprint collection. Laboratory space for visiting investigators is available by arrangement. Summer courses in marine invertebrate zoology and ichthyology are offered.

The Conferences and Institutes Division (CID), established in 1973, coordinates public service short courses, workshops, seminars, conferences, and institutes. The CID office is located at 128 College Avenue, UMO.

Project on Balanced Growth for Maine is involved in relating the research and other expertise of the University to the needs of the region and state in strategies and broad programs to improve the economy while protecting the natural environment. It involves continuing liaison with the leadership of the business community, labor and other groups, as well as with state agencies. The project sponsors workshops, conferences, and insures University representation at the policy level of groups with which it works. It also provides some research capabilities of its own as well as a link between the state's leadership groups and University expertise.

The Social Science Research Institute (SSRI), conducts and coordinates research in business and economics, political science, psychology and sociology. The Institute has a complete survey research unit that specializes in local and statewide surveys. Studies during the 1973-74 academic year have included economic impact studies of several areas, two studies relating to the energy crisis, and studies of political attitudes, normlessness, public television and industrial location.

The Exceptional Child Research Institute promotes and facilitates cooperation among units of the University and community agencies, and offers its services to those agencies and persons who require answers to problems related to exceptional children. Goals are to expand basic and applied research, to serve as an information center, to develop and test demonstration projects in the education, training, and remediation of problems of children with special needs, to bring together knowledge and skills of faculty members from various disciplines, in order to furnish interdisciplinary guidance to projects, to provide graduate and undergraduate training in research and teaching of exceptional children. The purposes of the Institute are realized through activities such as: ongoing evaluative services to school districts and community agencies, consultation on research and projects initiated by schools and agencies, workshops for dissemination of knowledge regarding exceptional children, for professionals working in the field, demonstration projects in existing campus facilities as well as in settings outside the University, seeking grants and inviting contracts to carry out research and demonstration projects commissioned by other agencies and persons.

Currently four colleges of the University offer courses, operate programs, and conduct research relevant to exceptional children. The Institute draws upon the facilities, resources, and faculty of these several units for its present staff and functioning.

Institute for Quaternary Studies consists of faculty members in four academic units who have combined their efforts in studying the Quaternary Period. Their interdisciplinary projects relate the effects of glaciation to the physical, chemical, social and economic conditions of the present and future.

The Pulp and Paper Foundation is supported by private funding which encourages a strong teaching and research program in pulp and paper technology, with a significant scholarship program available to qualified students.

The Scientific Equipment and Book Fund award is offered once a year and awarded to faculty members for the purchase of scientific equipment or books which will be used to stimulate or support a research project. Funds are allocated to faculty members of demonstrated research ability rather than to outfit a new faculty member with basic research equipment. The Faculty Research Funds Committee serves as a screening committee to evaluate the proposals. Application information may be obtained from the Secretary, Faculty Research Funds Committee.

The Sea Grant Program was established by action of Congress in 1966. Each state became eligible to apply for annual funds to focus the attention in universities on commitment to the sea. The University of Maine at Orono receives funds for research through a cooperative joint

project with the University of New Hampshire which is reviewed annually by the National Sea Grant Office.

Buildings—Orono Campus—The following are dormitories and dining facilities:

Androscoggin Hall (1963), capacity 248. Named for the county having the sixth largest number of regular full-time students enrolled at the university at the time of its construction.

Aroostook Hall (1963), capacity 179. Named for the county having the fifth largest number of regular full-time students enrolled at the University at the time of its construction.

Balentine Hall (1914-1916), capacity 107. Named in honor of the late Elizabeth Abbott Balentine, secretary and registrar of the University, 1894-1913.

Chadbourne Hall (1948), capacity 156. Named for Dr. Ava Harriet Chadbourne, professor emerita of education.

Colvin Hall (1930), capacity 48. Named in honor of the late Caroline Colvin, professor emerita of history and government and the first dean of women at the University. It became a cooperative dormitory for women in 1961.

Corbett Hall (1947), capacity 228. Named in honor of the late Lambert Seymour Corbett, formerly professor of animal industry and dean of men.

Cumberland Hall (1961), capacity 260. Named for the county having the second largest number of regular full-time students enrolled at the University at the time of its construction.

Dunn Hall (1947), capacity 228. Named in honor of the late Charles John Dunn, formerly Chief Justice of the Supreme Judicial Court of Maine and treasurer of the University from 1909 to 1923.

Estabrooke Hall (1940), capacity 172. Named in honor of the late Kate Clark Estabrooke, a former superintendent of the first women's dormitory, the Mount Vernon House.

Gannett Hall (1959), capacity 260. Named in honor of the late James Adrian Gannett, registrar of the University from 1913 to 1953.

Hancock Hall (1965), capacity 265. Named for the county having the seventh largest number of regular full-time students enrolled at the University at the time of its construction.

Hannibal Hamlin Hall (1911), capacity 89. Named for the late Hon. Hannibal Hamlin of Hampden and Bangor, the first president of the Board of Trustees.

Hart Hall (1955), capacity 233. Named in honor of the late John Norris Hart of Orono, dean of the University and professor of mathematics and astronomy.

Hill Top (1967-68) is a dining hall having the capacity to serve 900 persons cafeteria style. The dining hall serves Knox, Oxford and Somerset Halls. It also contains a craft center and a small convention meeting room.

Kennebec Hall (1961), capacity 180. Named for the county having the third largest number of regular full-time students enrolled at the University at the time of its construction.

Knox Hall (1967), capacity 285. Named for the county having the tenth largest number of full-time students enrolled at the University at the time of its construction.

Oak Hall (1937), capacity 96. Named for the late Hon. Lyndon Oak of Garland, a long-time member and president of the Board of Trustees.

Oxford Hall (1967), capacity 285. Named for the county having the eighth largest number of full-time students enrolled at the University at the time of its construction.

Penobscot Hall (1960), capacity 180. Named for the county having the largest number of regular full-time students enrolled at the University at the time of its construction.

Somerset Hall (1967), capacity 285. Named for the county having the ninth largest number of full-time students enrolled at the University at the time of its construction.

Stewart Commons (1963) is a dining hall having a capacity for serving 800 persons cafeteria style. This dining hall serves Androscoggin, Cumberland and Gannett Halls. Named for the late John E. Stewart, dean emeritus of men, 1928-1969.

Stodder Hall (1956), capacity 170. Named in honor of the late Mrs. Anne E. Stodder of Bangor, a benefactress of the University. Its dining hall serves 700 students.

The University Cabins (1945), capacity 42 men students. These are cooperative units.

University Park (1961) is a family housing development that provides apartments for 120 families (24 three-bedroom, 48 two-bedroom and 48 one-bedroom apartments).

Wells Commons (1958) is a dining hall having a capacity for serving 1500 persons cafeteria style. This dining hall serves Corbett, Dunn, Hannibal Hamlin, Hancock, Hart and Oak Halls. Named for William C. Wells, dormitory manager and director of residence and dining halls, 1939-1972.

York Hall (1962), capacity 260. Named for the county having the fourth largest number of regular full-time students enrolled at the University at the time of its construction. Its dining hall serves 700 students.

The following are used mainly for administration and instruction:

Agricultural Engineering Building (1938) houses the Agricultural Engineering Department and its laboratories for teaching and research.

Alumni Hall (1901), contains administrative offices and studios for Educational Television. It received its name because of contributions made by alumni to supply a part of the funds for its erection.

Alumni Memorial, consisting of an Indoor Field, Armory, and Gymnasium, was erected as a memorial to the Maine men who died in the service of their country in the Spanish-American War and World War I and is a gift of alumni, students, faculty, and friends of the University. The Indoor Field (1926), one of the largest in the country, provides ample facilities for indoor track, winter baseball practice, and military drill. The Armory (1926) houses offices and classrooms of the military unit, including an indoor rifle range. The Gymnasium (1933) contains the offices of the Department of Physical Education and Athletics, equipment and rooms for handball, boxing, wrestling, and corrective exercise, shower and locker rooms, and an auditorium with a seating capacity of approximately 3,000, used for basketball, lectures, student assemblies, banquets, and dances. The Stanley M. Wallace pool, gymnastics and wrestling areas were added in 1971. Swimming pool and diving facilities are olympic size. The pool spectator gallery seats 500.

Aubert Hall (1914), houses the Departments of Chemistry, Sanitary Engineering and the heavy equipment laboratories of Chemical Engineering. It was named in honor of the late Alfred Bellamy Aubert, professor of chemistry from 1874 to 1909. A wing was added in 1940 to increase facilities. Two additional wings were added in 1958 and additional renovations were completed in 1968.

Barrows Hall (1963), contains offices, classrooms and laboratories for the Department of Electrical Engineering. It was named for the late William Edward Barrows, formerly professor and head of the Department of Electrical Engineering. The office of the dean of the College of Engineering and Science is located in Barrows Hall.

Clarence E. Bennett Hall (1959), contains offices classrooms, and laboratories of the Department of Physics. It was named in honor of Dr. Clarence E. Bennett, professor emeritus of physics and chairman of the department for over 30 years.

Boardman Hall (1949) houses the Department of Civil Engineering, Department of Geological Sciences, Institute for Quaternary Studies, Department of Mechanical Engineering, Technology Experiment Station laboratories, and Department of Industrial Cooperation. It was named in honor of the late Dr. Harold Sherburne Boardman, Dean of Technology and President of the University from 1925 to 1934.

Carnegie Hall, the former library building erected in 1906 through the generosity of Andrew Carnegie, is now devoted to the Department of Art. It was named in honor of the original donor.

Coburn Hall (1888) houses offices of the Office of Research and Public Services, which include the Office of the Vice President for research and Public Services, Environmental Studies Center, Project Balanced Growth for Maine, Sea Grant Office, Sponsored Programs Division, Title I, and University of Maine Technical Services Program. The Credit Union Office is also housed in Coburn Hall. Coburn Hall was named for the late Hon. Abner Coburn, a former president of the Board of Trustees and benefactor of the University.

Crosby Laboratories (1938) contain the laboratories of the Department of Mechanical Engineering. It was named for the late Hon. Oliver Crosby, Class of '76, who bequeathed \$100,000 for its construction.

Deering Hall (1949) contains the Department of Agronomy, Botany, Entomology and Horticulture, also part of the facilities for the Agricultural Experiment Station and the Cooperative Extension Service. It was named in honor of the late Dr. Arthur L. Deering, dean of agriculture, who served the University from 1912-1957

East Annex (1947) houses the Department of General Engineering, the Department of Sociology, the Classified Personnel Office, as well as supplemental faculty offices for other departments in the College of Arts and Sciences.

English-Math Building and Computer Center (1976) provides offices, laboratory and classrooms for the Departments of English and Mathematics. An attached wing contains a 350 seat lecture room. Another wing houses Data Processing and the University Computer Center.

Fernald Hall (1870) the oldest building on the campus, contains offices of the student deans. It also houses a small snack bar operated by University Stores. It was named for the late Dr. Merritt Caldwell Fernald, president of the University from 1879 to 1893.

Fogler Library (1942-1976) was erected and furnished with the aid of a fund-raising campaign by alumni, faculty, students and friends of the University. Over the years until 1968 various areas were completed for a seating capacity of approximately 1,000 and a book

collection of 500,000 volumes. In the fall of 1976 a handsome addition to the original building was opened which, when fully completed, will increase the seating capacity to 2,500 and a book collection of 750,000 volumes. The Library was named in 1962 in honor of Dr. Raymond H. Fogler, a former president of the Board of Trustees.

Hauck Auditorium (1963) was erected and furnished with the aid of a fund-raising campaign by alumni, faculty, students and friends of the University. It contains an auditorium providing seating for 600 persons, stage facilities and the University Store. It was named in honor of Dr. Arthur A. Hauck, president emeritus, who served the University as president from 1934 to 1958.

Hitchner Hall (1959) contains offices, laboratories, and classrooms for the Departments of Bacteriology, Biochemistry, and Animal and Veterinary Sciences for programs in instruction, research and Extension. It was named for the late Dr. E. Reeve Hitchner, professor emeritus of bacteriology.

Holmes Hall (1888) is used by the Maine Agricultural Experiment Station for its administrative offices, and Departments of Chemistry and Food Sciences. It received its name from the late Dr. Ezekiel Holmes, writer, editor, and pioneer in Maine Agriculture.

Jeness Hall (1971) contains classrooms, offices and laboratories of the Department of Chemical Engineering, including research facilities for environmental studies, microscopy, fiber and materials sciences, and chemical process development. It was named in honor of Dr. Lyle C. Jeness, formerly professor and head of the Department of Chemical Engineering from 1947 to 1966. It also holds the offices of the University of Maine Pulp and Paper Foundation.

Lengyel Hall (1963) contains offices, classrooms and a gymnasium for the Department of Physical Education, women. It was named for Helen Anna Lengyel, professor emerita of women's physical education.

Clarence C. Little Hall (1965) houses the Departments of Foreign Languages and Psychology. Contains four general purpose lecture rooms and offices for faculty of the College of Arts and Sciences. It was named in honor of the late Dr. Clarence Cook Little, formerly professor of zoology and president of the University from 1922 to 1925.

Lord Hall (1904) contains offices and laboratories for the Department of Music on the first and second floors of the east wing, and for the Department of Journalism, the Maine Campus newspaper, and the Prism (yearbook). It was named for the late Henry Lord, a former president of the Board of Trustees.

Memorial Union (1953) is a memorial to the University of Maine men who died, and a tribute to all who served, in World War II. It is the gift of alumni, students, non-alumni faculty, and friends. This union is the center of student activities and recreational programs of the campus. It has a Memorial Room, meeting rooms, lounges, offices, snack bar, game room, bowling alleys, offices for the director of religious affairs and for student organizations, faculty-alumni lounge and dining room which serve the University community. Additional meeting rooms were added in 1961.

Merrill Hall (1931) is used for work in Home Economics. Also houses offices of Continuing Education Division. It was named for the late Dr. Leon S. Merrill, dean of the College of Agriculture from 1911 to 1933.

Murray Hall (1967) is used by the College of Arts and Sciences for its Department of Zoology. It contains offices, seminar rooms, undergraduate and graduate student laboratories. It was named in honor of Dr. Joseph Magee Murray, Dean of the College of Arts and Sciences from 1941 to 1966.

Nutting Hall (1968) contains offices, laboratories and classrooms of the School of Forest Resources. It was named in honor of Albert D. Nutting, director of the School of Forest Resources from 1958-71.

Rogers Hall (1928) houses administrative offices of the Department of Animal Sciences and contains research laboratories in animal nutrition and related work. It was named in honor of the late Dr. Lore Rogers, Class of '96, chief of research laboratories, Bureau of Dairy Industry, U.S. Department of Agriculture.

Shibles Hall (1961) contains facilities for the College of Education, the Instructional Systems Center and laboratories for teacher training are located in this building. It was named in honor of Mark R. Shibles, dean of the College of Education from 1947-1971.

Stevens Hall (1924), with two wings constructed in 1933, contains accommodations for the Colleges of Arts and Sciences and Business Administration. It was named in honor of the late Dr. James S. Stevens, for many years dean of the College of Arts and Sciences.

Wingate Hall (1892) contains offices for the Registrar, Career Planning and Placement, Student Aid, and the University Planetarium. It was named for the late William P. Wingate, a former president of the Board of Trustees.

Winslow Hall (1909) is used by the College of Life Sciences and Agriculture, the Cooperative Extension Service, Department of Agricultural and Resource Economics, and houses the Graduate School Office. It was named for the late Edward B. Winslow, a former president of the Board of Trustees.

Other buildings include the President's House, Horticultural Greenhouses, Dairy Barns and Milk House, Federal Office Building, Poultry Buildings, Stock Judging Pavilion, Machine Tool Laboratory, Maples, Agricultural Engineering Shop Building, Observatory, Student Health Center, Alumni Center, University Public Information and Printing Office, the Central Heating Plant, Service Building, Entomology, several residences occupied by faculty members, various farm buildings, Police and Safety Building, and Upward and Onward Building.

Fraternity Houses—The following fraternities have houses on or near the Orono campus: Delta Upsilon, Beta Theta Pi, Delta Tau Delta, Kappa Sigma, Lambda Chi Alpha, Phi Kappa Sigma, Sigma Chi, Sigma Nu, Theta Chi, Phi Eta Kappa, Alpha Gamma Rho, Alpha Tau Omega, Phi Gamma Delta, Tau Epsilon Phi, Tau Kappa Epsilon, Sigma Alpha Epsilon, and Sigma Phi Epsilon.

Residence and Dining Halls—Five complexes of residence and dining halls serve the students. These consist, in general, of a dining hall around which are clustered residence halls for both men and women. At the far south end of campus, York dining hall serves York residence hall (men and women), Aroostook (men), Kennebec (women), Estabrooke (men and women graduate students). In south center, Stodder cafeteria serves to Stodder residence hall (men and women), Balentine (women), Chadbourne (men and women) and Penobscot (men and women.) In the center of campus, Wells Commons serves Hart (women), Corbett (men), Dunn (men and women), Hancock (men and women), Hannibal Hamlin (men) and Oak Hall (men). Two complexes are located in the northeast section where Stewart Commons serves Gannett (men), Androscoggin (women), and Cumberland (men and women), and the newest complex is clustered around Hill Top Cafeteria. Here are located Knox (men and women), Oxford (men and women), and Somerset (men and women).

Colvin Hall is the cooperative women's residence where students prepare and serve their own meals and do the general house work in the unit, thus reducing their costs. The University Cabins, with accommodations for four male students each, provide housekeeping facilities.

The privilege of living in a University residence hall is granted to those undergraduate students who are registered for a minimum of 12 credit hours per semester. In special cases such as student teaching, second semester seniors, etc., the Vice President for Student Affairs may grant permission for them to continue to reside in a residence hall.

Graduate students who are enrolled in full-time study for the academic year have the privilege of residing in the University facilities provided for them.

Residents of the dormitories are furnished meal tickets good for 14 or 21 meals per week. Non-residents may buy meals in any dining hall on a transient basis or may purchase a semester meal ticket.

At Bangor Community College, women in two-year courses live in Belfast Hall. Augusta, Ellsworth, Rockland, and Lewiston Halls will be occupied by two-year men students. Meals for these students are served in Brewer Hall, the dining room close to the residence halls.

Students are expected to reside within the system for a complete semester. If they leave, they are subject to a refund policy as set forth in the Residence Halls contract.

Residents of the dormitory system furnish their own towels, linen, pillows, blankets, and any decorative features such as rugs, bureau scarfs or drapes.

Temporary housing is furnished as a convenience to students who find it difficult or impossible to leave the campus for the Thanksgiving, mid-year, and spring recesses. No accommodations are available during the Christmas recess.

Athletic Facilities—The University's facilities for athletics and physical education on the Orono campus include the Memorial Gymnasium, the Memorial Indoor Field House, the Helen A. Lengyel Gymnasium, the Stanley M. Wallace Pool, the Harold A. Alfond Sports Arena, gymnastics and wrestling areas.

The athletic fields for men include 14 tennis courts, two baseball fields, a football stadium, three football practice fields (one of which is illuminated for evening practice), a quarter-mile cinder track, hammer and discus fields, fields for intramural sports, a four-mile cross country course, skiing facilities, and three soccer fields.

The Harold A. Alfond Sports Arena (to be completed in 1977) is a 2,800-seat facility that will accommodate competitive ice hockey and other ice skating activities. Named for Harold A. Alfond, a substantial contributor to the construction of this building.

The Helen A. Lengyel Gymnasium has a gym floor and a large recreation room which are used by the department for intramural activities in team and individual sports, recreational games, and club activities, as well as for classes. The building includes an indoor archery

range a first aid room, and a remedial gymnasium, which is also used for folk, modern, and square dancing classes.

The women's athletic field is located at the south end of the campus near the women's residences. It has a hockey field, practice area and an archery range and four tennis courts. In season, the field is also used for soccer, speedball, and softball.

University Farms—The University Farms include approximately 900 acres of land used primarily for a dairy operation. One farm adjoins the campus; others are located in the Stillwater section of Old Town.

The campus farm (the J. Franklin Witter Animal Science Center) includes a modern dairy barn housing an outstanding herd of registered dairy cattle representative of the leading breeds. A sizeable poultry laying flock, and a flock of sheep are also maintained on the campus farm. A herd of pleasure horses is located off campus at the Smith Farm and is also part of the total farm operation.

The farms serve several purposes. They are utilized for student instruction, as laboratories for agricultural courses, and as demonstration projects for Extension programs. Research projects are continuously in progress in various segments of the operation. Milk and eggs produced on the farm are utilized by the University dormitory system.

The Dwight D. Demeritt Forest—The Dwight D. Demeritt Forest, totaling 1,750 acres and located in the Stillwater-Old Town area, is administered by the School of Forest Resources for student instruction, project demonstration, and research. An additional two acres are operated as a forestry nursery. Indian Township, a tract of 17,000 acres, is managed by the School of Forest Resources for summer instructional purposes. Headquarters for the summer training is the Robert I. Ashman Forestry Camp on Long Lake, near Princeton.

Fay Hyland Tract—The International Paper Company in 1974 gave to the University of Maine a tract of 360 acres of bog named the Fay Hyland Tract. This land will be administered by the School of Forest Resources as a part of the Dwight D. Demeritt Forest for student instruction, project demonstration and research.

The Harold Worthen Forest—In 1964 Harold Worthen gave to the University of Maine 250 acres of forest land in the town of LaGrange, Maine to be administered by the School of Forest Resources.

Woodland Preserve—The Woodland Preserve, consisting of two tracts of woodland and marsh totalling approximately 33 acres in the southeast corner of the Orono campus, was established by action of the board of Trustees in 1967 to provide the University community with a nearby area for the scientific study and observation of the ecology and natural evolution of forest and marsh.

Computing and Data Processing Services—The Computing Center supports the instructional, research, consulting and administrative needs for the University system. An undergraduate degree in computer science is offered. This degree program is administered by the Computer Science Committee through the Department of Mathematics. Courses in digital computer programming are offered by the Department of Mathematics, Chemical Engineering, and General Engineering, the latter two including analog work. Non-credit courses and seminars are available to establish competencies necessary to make effective use of computing facilities. Package programs are available for most commonly used statistical work and consulting programmers are available to advise on computability.

University facilities include:

The IBM/370 (in Computing Center, Orono) which supplies both batch and time-sharing computing. Current configuration is a model 145 with 1 megabyte main memory, ten 3330 disk drives and four 3420 tape units (two are dual density at 800 bpi and two are single density at 1600 bpi). The operating system is VM/370 with CMS, running DOS with RJE and DOS with CAI. OS is available.

Typewriter-based terminals are installed at all locations of the University. Intermediate-speed remote batch terminals are in operation at Augusta, Farmington, Presque Isle, Portland and Gorham campuses.

The CALCOMP 936 Drum Plotter and Controller for off-line plotting is equipped with interchangeable drums, allowing plotting on widths of 33 inches and 11.7 inches and lengths of up to 120 feet with standard increment size of 0.002 inches and with three-color plotting. The plotter is located in the Computing Center.

The IBM 1800 (in Jenness Hall, Orono) is part of the Gottesman Computation Center. It is particularly well adapted to process control work. It is being used to monitor remote data acquisition. The facility includes a 16K byte memory, two 2310 disk drives, and an off-line printer. The operating system is a modified TSX.

The IBM 1230 (Wingate Hall, Orono) is part of the Testing and Counseling Service. This equipment can be used to convert test and questionnaire responses into a medium for further analysis on any of the other facilities.

For problems not suited to the above equipment, efforts are made to schedule them on other equipment outside of the University.

The Libraries—The University Libraries serve the intellectual needs of the students and faculty and stimulate the use of library materials for research and recreational reading. The libraries contain more than 500,000 volumes and receive some 3,300 periodicals. They are the regional depository for northern New England for U.S. Government publications and have a file of maps for the Army Map Service. They also are a selective depository for Canadian government publications. They extend these resources to other libraries through interlibrary loan service, to visiting scholars, and to citizens of the state whenever they can do so without interfering with local needs. Periodical articles and similar materials not available for lending may often be photocopied, subject to copyright regulations.

The University of Maine Art Collection—The University of Maine Art Collection in Carnegie Hall contains materials depicting the history of art through all ages. More than 10,000 photographs and color reproductions, and more than 20,000 slides of art masterpieces are available, on occasion, to students and faculty for study and loan. Through generous gifts in recent years the collection contains some 2,200 original sculptures, paintings, and graphic arts by outstanding American and European artists: Rembrandt, Piranesi, Inness, Homer, Has-sam, Marin, Hartley, Sprinchorn, Keinbusch, Wyeth, Pleissner, Kingman, Peirce, Picasso, Matisse, Rouault, Hamabe and others. Almost all of these works are hung in public areas throughout the campus.

The University of Maine Program of Exhibitions—Throughout the academic year and during the Summer Session the Art Collection presents each month seven different art exhibitions: four in Carnegie Hall and one each in the Photo Salon of the Memorial Union Building, the Hauck Auditorium Lobby, and the lobby of Alumni Hall. Special exhibits are arranged from time to time in Stewart and Wells Commons lounges, the library reference room and in the Maine Christian Association Building. All exhibits, open without charge, display only original art, with special preference given to professional artists and craftsmen living or working in Maine.

The University of Maine Traveling Exhibitions—As a service to the state each year, the Art Collection arranges and circulates 100 different exhibitions of original art throughout the schools and academies of Maine. There is no charge for these exhibitions, but reservations must be made before Sept. 30 for each academic year. All inquiries should be addressed to Professor Vincent A. Hartgen, Curator, University of Maine Art Collection.

Scientific Collections—The following collections are located on the Orono campus:

Botany—The herbarium in Deering Hall includes several collections, the most important of which is the one made by the late Rev. Joseph Blake and presented to the University by Mr. Jonathan G. Clark of Bangor. The late Professor F.L. Harvey left to the herbarium the general collections accumulated during his connection with the University. Other important collections are Collin's Algae of the Maine Coast, Halsted's Lichens of New England, Halsted's Weeds, Ellis and Everhart's North American Fungi, Cook's Illustrative Fungi, Underwood's Hepaticae, Cummings and Seymour's North American Lichens, and Bartholomew's Fungi Columbiana.

The herbarium has been enriched recently by the personal collections of Mrs. Frank Hinckley, Helen Paine Scoullar, Charles Curtis, Henry Wilson Merrill, Maynard Quimby, Louise Coburn, Sue Gordon, Ralph C. Bean, George B. Rossbach, K.P. Jansson, Glen D. Chamberlain and Edith C. Bicknell. Numerous centuries of *Plantae Exsiccatae Grayanae* are significant additions. Sixty-five thousand herbarium sheets are available.

Approximately three acres of land extending southward from the Heating Plant and between the Forest Nursery and the Stillwater River were assigned to the Department of Botany for the establishment of a Botanical Plantation in the autumn of 1934. The first three plantings were made in conjunction with Maine Day of 1935. At present, more than 300 species of trees and shrubs have been introduced. This area was recently named the Fay Hyland Botanical Plantation. Many species of ferns and flowering plants have also been included.

Entomology—A small area partly enclosed by trees of the Botanical Plantation and near the southern boundary of the Forest Nursery forms a site for a small University apiary. This apiary has approximately five colonies that are used for pollination studies.

The Edith M. Patch aphid collection, housed in Deering Hall, is one of the outstanding aphid collections in North America. An outstanding collection of grasshoppers is probably the second most extensive collection in New England. Local mosquitoes and blackflies are well represented, as are solitary bees associated with blueberries.

These are major portions of the insect collection maintained by the University for reference purposes in dealing with inquiries concerning insect pests sent in by citizens of Maine.

Geology—The geological collections of minerals, rocks, and fossils are housed in Boardman Hall.

Zoology—These collections, located in Murray Hall, consist of a working collection of bird skins, a display of bird mounts, and study collections of various groups of both vertebrates and invertebrates. An important part is formed by the Anson Allen Collection of Invertebrates and of Maine Birds, presented by Mrs. Mattie Munson; the Eckstorm Collection of Birds, presented by Mrs. Fannie H. and Mrs. P.F. Eckstorm; and the bird skin collection of the Portland Society of Natural History-Maine Audubon Society, one of the oldest of its kind in the country and consisting of 3,844 study skins.

Observatory and Planetarium—The Observatory and Planetarium are operated by the Observatory staff for the Department of Physics and Astronomy. These facilities are used both in support of astronomy courses, and in programs open to the public. The Observatory houses a Clark refractor, and is open on a general basis every clear night of the academic year. Groups may visit the Planetarium on the second floor of Wingate Hall by making arrangements, in advance, through Public Information and Central Services.

The University of Maine Anthropology Museum—The Department of Anthropology has established an Anthropology Museum on the third floor of South Stevens Hall. The museum serves not only as a teaching aid for students in the department but also as an additional cultural facility for the campus and the community. Through the generosity of many interested persons the collection includes material relating to the American Indians, Africa, the Arctic and Oceania. There are also special teaching exhibits on weapon and tool development, fossil man and race, as well as special sections on Maine Indians and Maine prehistory. Loan collections from other institutions sometimes are exhibited. The museum is open to the public whenever the University is open. Regular hours are Monday through Friday, 8 a.m. to 4 p.m. The museum can be opened for groups at other times by appointment.

The Northeast Archives of Folklore and Oral History—The Northeast Archives of Folklore and Oral History, a part of the Anthropology Department, is located in the basement of South Stevens Hall. It is a research facility and a repository for tape recordings, transcripts of tapes and related photographs and manuscript material relevant to the folklore and folklife of Maine and the Maritime Provinces of Canada. Presently it holds over 1,000 collections, about 700 hours of tape recordings, about 500 photographs and a considerable amount of transcription, dubbing and field recording equipment. The Archives is especially strong in material on folksong, lumbering, river-driving and fishing. In cooperation with the Northeast Folklore Society, the Archives publishes *Northeast Folklore*, a journal which has been appearing annually since 1958.

University Publications—The following are included in the various bulletins and reports regularly issued by the University of Maine at Orono:

University of Maine Bulletin is issued about 25 times a year to give information to students, faculty, alumni, and the general public.

University of Maine at Orono Press books, including the Maine Studies Series, are published under the direction of the Board of Editors of the University of Maine at Orono Press. A price list may be obtained from the Public Information and Central Services building, Room 109, U of M, Orono. Orders and exchanges should also be directed to this address. The Maine Studies Series is a select series dealing with the State of Maine and the adjoining Canadian provinces.

Life Sciences and Agriculture Experiment Station Publications include technical and popular bulletins and miscellaneous reports in which are contained the results of research studies; and Official Inspections which contains the results of inspections of feeding stuffs, fertilizers, agricultural seeds, fungicides and insecticides, and foods and drugs. A report of progress is issued as *Research in The Life Sciences*. A free copy of each publication is available upon request.

Cooperative Extension Service Bulletins and Circulars are issued by the Cooperative Extension Service on a wide variety of subjects relating to agriculture, home economics, youth education, resource development and public affairs. Maine residents may secure a list of available bulletins and circulars upon request to the Mail Room, PICS Building, U of M, Orono.

The Maine Alumnus, an illustrated magazine of campus and alumni news, is sent to former students of the University of Maine at Orono who subscribe, and to those making donations to the Annual Alumni Fund.

Maine Law Review is a continuation of the former *Maine Law Review* last published in 1920. It was revised as a student activity in 1962 and is published by the students at the University of Maine School of Law, located in Portland.

Student publications are described in a section of this catalog called "Student Activities."

Counseling Center—The Counseling Center provides assistance to students with academic, vocational, personal and emotional concerns.

Counseling and psychotherapy are the most frequently used services. Opportunities for psychological evaluation, psychiatric evaluation and consultation, and self-improvement programs in such areas as interpersonal relationships and study skills are available. The Center maintains an educational-occupational information library, including college and graduate school catalogs representative of many types of school and geographical locations. Students may drop in to use these materials at any time. In order to help answer a student's questions about himself, the counselor may assign interest inventories, aptitude tests and personal preference inventories.

The Center staff provides a variety of consultation and educational programming designed to help prevent the development of problems requiring individual help, and to assist in creating an educational environment more conducive to student growth.

All students, freshmen through graduate, on the Orono and Bangor campuses of the University, are eligible for the service of the Center free of charge. Students are seen by appointment, which can be made by coming to the Center or by telephone. All visits are confidential. The main office of the Counseling Center is at 101 Fernald Hall, and most initial contacts will be made there. Psychological and psychiatric services are also provided at the Student Health Center.

Office of Career Planning and Placement—Through this office the University offers career planning and placement assistance to undergraduate and graduate students, alumni, and employers in both teaching and non-teaching fields. The office provides the following services:

- 1) Counsels and assists students and alumni in career planning.
- 2) Notifies registrants of suitable employment opportunities.
- 3) Assists candidates in preparing and presenting effective applications.
- 4) Cooperates with employers in their search for qualified personnel.
- 5) Informs employers of available candidates, of new academic fields, and of other pertinent developments and trends.
- 6) Develops career information for University men and women in both new and traditional fields of opportunity.
- 7) Assists students in locating summer vacation employment.

The office schedules for students each year an extensive and informative on-campus interviewing program with representatives from both teaching and non-teaching fields.

The College Teacher Division serves candidates for master and doctoral degrees interested in employment in college and university positions.

No charge is made to students or employers for the services of the Office. A nominal charge is made for services to alumni.

Office of Student Aid—The Office of Student Aid processes applications for scholarships, University loans, loans under the Higher Education Act, Educational Opportunity grants and a variety of part-time and summer jobs both on and off the campus. Detailed information on student aid will be found by consulting the index.

Foreign Student Adviser—The University maintains an office for the information and assistance of all students who are not citizens of the United States.

The University wants each international student to have the best possible educational and personal experience while he or she is in the United States and especially while at the University.

The Foreign Student Adviser's Office assists students in understanding the administrative regulations of the institution; local, state and national laws; accepted standards of conduct; and expectations and reactions of those he will encounter while in a new cultural environment.

This office is responsible for issuance of the U.S. Immigration I-20 or DSP-66 Forms necessary for the foreign student to obtain a student visa from the American consul in his or her homeland. All international students including those with "F" student or "J" exchange student status must report to the Foreign Student Adviser's Office as soon as convenient after arrival on campus. Advice concerning immigration regulations, necessary forms, etc., is available so that international students may remain in the United States as long as is properly necessary to achieve their educational goals.

Health Service—The Cutler Health Center offers a comprehensive health care program for all students, including part-time students and CED students. Those who wish to enroll in the

program must prepay a health fee of \$14 per semester before the end of the first five days of classes. For those who fail to enroll by the end of that period or who choose not to participate in the program, health care will be provided on a fee for service basis. Ordinarily such fees will be considerably higher than the prepayment fee. The following services are offered:

1. Unlimited consultations with Health Center personnel regarding illness, accident or any medical question.
2. Diagnostic x-rays
3. Diagnostic laboratory services
4. Physical therapy services
5. Immunizations as deemed advisable
6. Allergy injections
7. Premarital counseling and family planning services
8. Pharmacy services (a licensed pharmacy is operated within the Health Center)
9. Coordination of the student and accident insurance program to ensure maximum benefits to students.

In addition, the Cutler Health Center includes a 32-bed licensed hospital. Charges are made for hospital services. Our current daily room rate is \$40 a day. These charges are covered by the student health and accident insurance plan. They are also covered by Maine Blue Cross and Massachusetts Blue Cross but not by Connecticut or New Hampshire Blue Cross.

The Health Center staff consists of five full-time physicians, five part-time specialists, the equivalent of two full-time clinical psychologists, and the necessary ancillary personnel.

Religious Affairs—Six religious groups provide opportunities for religious programming, worship, study, conversation and witness: Hillel Foundation for Jewish students, Maine Christian Association for Protestant students, and Our Lady of Wisdom Chapel and the Newman apostolate for Roman Catholic students. The chaplains are available for counseling or instruction. The Intervarsity Christian Fellowship and Navigators, two approved student organizations, meet weekly in different campus locations, e.g. the Memorial Union. The Christian Science Organization meets for study and worship each week in the Drummond Chapel of the Union Building.

Questions concerning the above may be directed to the Office of Student Activities and Organizations, second floor of the Memorial Union.

Local Churches and Synagogues—The churches and synagogues of Orono, Old Town, and Bangor always welcome the attendance of University students. The Drummond Chapel, a small meditation room open to the University community, is located in the Memorial Union.

Activities concerned with religious affairs are coordinated through the Office of the Dean of Student Activities and Organizations, Memorial Union.

Use of Laboratory Apparatus—Many laboratory courses involve instruction in and the use of various types of power equipment and laboratory apparatus. The University takes every precaution to provide competent instruction and supervision of such courses. It is expected that students will cooperate by following instructions and exercising caution. In case an accident does occur, resulting in personal injury, the University can assume no responsibility. Student Health and Accident Insurance is recommended.

REGISTRATION

Undergraduates at the Orono campus will register in accordance with the following:

Freshmen—All members of the incoming freshman class are required to attend one of several orientation sessions held during the summer prior to the start of classes at the Orono campus. The dates when these are held each year are furnished to incoming freshmen and their parents, and parents are strongly urged to attend the orientation program with their sons and daughters.

Registration for the fall semester is accomplished during the orientation period in consultation with representatives from the faculty. During this time, information is distributed regarding the start of classes, arrival at dormitories, etc. for the beginning of the semester in September.

Upperclassmen—Upperclassmen transferring to Orono or being readmitted to Orono should contact the dean of their prospective college (upon being admitted to the University) to register for the upcoming semester.

In the spring, all currently registered students planning to return to UMO the next fall must meet with their adviser to register for the upcoming fall semester.

Academic advisers are assigned all students for help in planning their educational programs to ensure their meeting graduation requirements, for counsel and guidance in academic work, and for advice about study or classwork problems. *The final responsibility for fulfilling degree requirements, however, rests with each student.*

Degrees—The University awards the following degrees:

Associate of Arts (A.A.) in with the major field designated, to those who complete the appropriate two-year curriculum at Bangor Community College.

Associate of Science (A.S.) in (major field) to those who complete the two-year curriculum in the College of Life Sciences and Agriculture, Engineering and Science or appropriate two-year curriculum at Bangor Community College.

Bachelor of Arts (B.A.) with specification of the major subject, to those who complete a four-year curriculum in the College of Arts and Sciences.

Bachelor of Arts in Special Studies (B.A. Spec. Stud.) to those who complete this four-year curriculum in the College of Arts and Sciences.

Bachelor of Music (B. Mus.) to those who complete the prescribed four years' work in the College of Arts and Sciences.

Bachelor of Science (B.S.) to those who complete the prescribed work of four years in the Colleges of Business Administration, Life Sciences and Agriculture, or Engineering and Science.

Bachelor of Science in Education (B.S. in Ed.) is conferred upon students who complete the prescribed work in the College of Education.

Bachelor of Arts or of Sciences (B.S. or B.A.) (Pre-professional Study) for those who have continued work in certain professional schools after three years' undergraduate work at Orono.

A Five-Year Certificate in Pulp and Paper Management is issued which embraces a Bachelor of Science degree and a year's collateral study in the Pulp and Paper Management curriculum.

In order to be considered for graduation, a student must complete an *Application for Degree or Certificate* form during the semester he plans to graduate. These forms are available in the Registrar's Office. Although every effort is made to include all potential degree recipients on graduation lists, failure to file an application for degree with the registrar's Office may result in no degree being awarded. If, for any reason, application is made, but no degree is conferred, another application must be submitted prior to the next commencement. *A minimum residence of one year is required for the attainment of any bachelor's degree.* This regulation refers to the senior year. Two exceptions to this regulation were approved by the Trustees in 1968:

(1) Exceptions may be made for students who have already completed *three or more years at the University at Orono* who may be given permission by their academic dean, when there is sufficient and valid reason, to complete the senior year elsewhere under the general supervision of their Orono dean's office.

(2) Students who have completed a minimum of *three years of work at the University at Orono* and who have been admitted to an accredited professional school of medicine, dentistry, veterinary medicine, or divinity, either directly or after intervening military service, may qualify for the appropriate bachelor's degree at the University of Maine at Orono upon receipt of the professional degree, provided that their collegiate dean at Orono approves. This policy is retroactive. Inquiries about degrees awarded under this exception should be addressed to the Registrar.

Baccalaureate Degrees with Distinction are conferred at commencement for the following attainments in rank.

Seniors having an average grade of 3.50 or above will be graduated with Highest Distinction, 3.25 to 3.49 with High Distinction and 3.00 to 3.24 with Distinction if they meet the criteria listed below.

The average grade is based on the student's total work on the Orono campus which must include sixty (60) hours of resident study at the University of Maine at Orono at the time of graduation. Candidates must take their senior year at the University of Maine at Orono.

Degrees with Honors, with High Honors, or with Highest Honors are awarded to seniors who successfully complete the Honors Program.

Valedictorian and Salutatorian—From the graduating seniors at the June commencement, the two highest ranking baccalaureate degree candidates are designated class valedictorian (highest) and salutatorian (next highest). This rank is based upon the first seven semesters' attendance, all of which must have been in resident instruction at the University of Maine at Orono.

The following advanced degrees or certificates are offered by the Graduate School:

Master of Arts (M.A.) and Master of Science (M.S.) with designation of the major subject or field.

Master of Professional Studies in Agricultural and Resource Economics (M.A.R.E.).

Master of Business Administration (M.B.A.).

Master of Professional Studies in Community Development (M. Comm. Dev.).
 Master of Education (M.Ed.)
 Master of Engineering (M.E.) with departmental designation.
 Master of Library Service (M.L.S.).
 Master of Mechanical Engineering (M.M.E.).
 Master of Music (M. Mus.).
 Master of Public Administration (M.P.A.).
 The Certificate of Advanced Study (C.A.S.) with a planned program.
 Doctor of Education (Ed.D.).
 Doctor of Philosophy (Ph.D.) with designation of major field.

Grading System—Grades at the University are given in terms of letters as follows. (For purposes of comparison these letters carry the following arbitrary values for undergraduate students: A=4, B=3, C=2, D=1, E=0; (for graduate students both D and E grade=0.)

Passing undergraduate grades: A, high honors; B, honors; C, satisfactory, successful, and respectable meeting of the course objectives; D, low level passing; Q, passed for degree credit on a *Pass-Fail* basis.

Passing graduate grades: A, high honors; B, honors; C, may be considered satisfactory by specific approval of student's advisory committee. *Acceptable*, applied to satisfactory theses only.

Failing grades:

E, failed. (Note: Failing a pass/fail course does not affect the grade point average.)

Progress grade: R, final grade deferred (Primarily for theses).

Deficiency grades: I, deficiency in course work. May be made up within periods stated in Handbook.

Non-credit grades: W, dropped without penalty.

Each college sets its own graduation requirements in terms of grades or grade points.

Candidates for associate and baccalaureate degrees must: (a) receive passing grades in all courses required by the major department, at a grade point level specified by the department or college (in no event less than 1.8, and usually at least 2.0); and (b) accumulate the number of degree hours specified by the college for the curriculum pursued. Details are given under each college's listing.

The degree hours are the sum of the course credit hours of those courses which may be counted toward a degree, provided a passing grade has been received.

The accumulative average is the quotient of the grade points divided by the total hours, carried to two decimal places. The grade points are the product of the course credit hours and the numerical value of the letter grade: A=4, B=3, C=2, D=1, E=0. The total hours are the sum of the course credit hours from all courses except those taken on a *Pass-Fail* basis. *Pass-Fail* registrations do not affect the grade point average.

Degree requirements for graduate students are given in the Graduate School catalog.

Grade reports are sent in the student's name to an address designated by the student. (Campus addresses are not considered valid grading addresses.) A student's academic performance is considered confidential information and written permission of the student is required to fulfill inquiries by those persons outside the administrative or academic community of the University of Maine at Orono.

Considerable care is taken to ensure that course registrations and grades entered on a student's permanent record are accurate. Any student who, upon receipt of a semester final grade report, suspects an error has been made should take the matter up immediately with the Registrar's Office. Records are assumed to be correct if a student does not so report to the Registrar's Office within six months of the completion of a course. At that time portions of the record are committed to microfilm, which cannot be emended.

Some Student Regulations—Much information of interest to students is contained in the *Student Handbook* available in the Student Affairs Office. A few policies of general interest are given here.

It is assumed that all students entering the University are willing to subscribe to the following: *A student is expected to show, both within and outside the University, respect for order, morality, and the rights of others, and such sense of personal honor as is demanded of good citizens.*

The University requires certain standards of academic performance and of general good character for admission; if these are not maintained, the University suspends or dismisses the student. Every effort is made to provide adequate academic and personal counseling for all students, with the aim of enabling them to successfully complete their courses of study.

Motor Vehicles—*Freshmen are not permitted to have or operate motor vehicles at the University of Maine.* This regulation prohibits a freshman from keeping an automobile on the campus or in Orono or vicinity. Students are expected to observe the spirit as well as the letter of the regulation and the cooperation of parents is solicited in the operation of the rule. Exceptions may be made by the Security Registrar in cases of freshmen who commute daily from their homes.

Upperclass students are allowed to have and to operate motor vehicles on the campus, but all such vehicles must be registered in the office of Mr. William Prosser, Security Registrar, Police and Security Office, and bear an official University sticker. There is a registration fee of \$1.00.

Dismissal and Suspension—Students may be dismissed or suspended from the University for unsatisfactory work (academic dismissal* or suspension), for misbehavior (disciplinary dismissal or suspension), or for mental or physical health problems (administrative disenrollment). Dismissed students* are ineligible to *apply* for readmission for one year from date of dismissal; suspended students may apply for readmission effective upon termination of suspension. Dismissed students* are ineligible to register for credit or non-credit in any division of the University for one year following dismissal; suspended students for the duration of the suspension.

**Exception: First (fall) semester freshmen dismissed in January for low grades (academic dismissal) may apply for readmission effective the end of the ensuing spring semester, without waiting for an entire year to elapse.*

Withdrawal—Students who desire to withdraw from the University for any reason must secure a withdrawal slip from the Registrar's Office and have it completed. Failure to do so may result in failing grades being recorded in all courses at the end of a semester. Additionally, withdrawal after the final date of the "withdrawal with penalty" period set by the University as detailed in student regulations, except for approved emergency reasons, will also result in failing grades.

Indebtedness to the University—Bills are due no later than the registration day for each session. Unpaid and overdue balances in a student's account at the University Business Office result in the withholding of transcripts, until satisfactory arrangements can be made with the Bursar or Business Manager. When tuition and/or room and board payments for a semester already in progress remain unpaid beyond the due date without acceptable arrangements for payment having been made, a student's academic registration may be cancelled and dormitory occupancy terminated. Further registration may be denied until the account is current.

Physical Examination—The University requires that all entering students, freshmen, transfers, graduate, and special, complete a medical data form sent to them under separate cover. The University may require any student to have a physical examination, tuberculin skin test, and an x-ray. Physical examinations may also be required of students seeking readmission to the University.

The University Police—The Department of Police and Safety provides complete police service to the University community. This is available on a 24-hour basis. The University Police Department is primarily a service organization, eager to assist the students, faculty and staff in any way possible. Among the services rendered are: ambulance, passport photographs, job applicant fingerprinting, firearms safekeeping, and information.

The University police strive to set the example in the police field so that the student is exposed to competent, thorough police protection. Both graduate and undergraduate students are appointed by the University Police to work with the department. The department's duties include, but are not limited to, the protection of life and personal liberties, protection of property, enforcement of University regulations and state statutes, traffic and parking control, and the prevention of crime. The department works with other University departments and maintains liaison with local, state, and federal law enforcement and public safety agencies. Each staff member is a trained, licensed ambulance attendant.

Responsibility for Personal Property—*The University does not under any circumstances assume responsibility for loss of or damage to personal property through fire, theft, or other causes. Persons desiring protection against possible loss or damage should purchase appropriate insurance unless it is found that parents already have desired coverage by means of a family policy.*

THE UNIVERSITY HONORS PROGRAM

General—The University Honors Program is open to all qualified undergraduate students in the University. Its purpose is twofold: (1) to introduce students of high scholastic potential to the major areas of knowledge—mathematics and science, social studies, literature,

philosophy, and fine arts—through individual reading and small group discussion; and (2) to develop their skills to as high a degree as possible in the field in which they choose to concentrate.

The program in the freshman and sophomore years is the same for all colleges and is administered by the Honors Council. Its task is the orientation of the student to the broad perspectives of the academic world.

The programs for the junior and senior years vary somewhat from college to college and are administered by the Honors Committee of each college. Their task is to sharpen and focus the student's abilities in his own field of specialization.

Content—A limited number of highly qualified students from each entering class are selected to begin the Honors Program in their first semester. The theme of the freshman year in Honors is a study of the seminal ideas of western civilization. Emphasis is placed on the reading and discussion of source materials. In the spring semester, some students with fine first-semester records are admitted to the program. The sections of the freshman course are limited to 12 to 14 students each.

During the sophomore year, honors work is based on small group tutorials, each group consisting of three or four students. Each group meets weekly with a tutor for the discussion of books and ideas from the honors reading list. Every group does substantial reading in three or four major areas of thought each semester.

In the junior year the student begins his concentration in his major field. His work in honors may be a course of study under tutorial supervision designed to acquaint him with his major field, or, at the option of his college Honors Committee, he may take an interdisciplinary seminar in one semester of the year.

For the senior year, a thesis or research project, within or closely related to his field of primary interest, is the major part of his Honors Program. A final comprehensive examination before a faculty board tests the student's accomplishments in both objectives of the program: breadth of knowledge and depth of specialization within his major field.

Degree—The degree of honors awarded—Honors, High Honors, Highest Honors — depends upon three factors: the student's accumulative average over seven semesters; the quality of his senior thesis or project; his performance on the comprehensive examination. In order to receive a degree with Honors, a student must have a minimum of four semesters' work in the Honors Program, including both semesters of the senior year, and at least one semester of sophomore group tutorials.

Entry—Selected entering freshmen are invited to enter the program on admission to the University; others are admitted at the end of their first semester. In addition, a substantial number of students are admitted at the beginning of the sophomore year, some at mid-years in the sophomore year, and a small number at the beginning of the junior year.

Admission—Students are recommended for the Honors Program by the Honors Committee of the college in which they are registered and admitted to the freshman and sophomore programs by the Honors Council. To be eligible for consideration for the Honors Program, a student should normally have a point average of 3.0 or better, have high C.E.E.B. test scores, and show curiosity, initiative, and intellectual flexibility in the work he has done. Students wishing to join the Honors Program should consult the secretary of their college Honors Committee: Life Sciences and Agriculture, Prof. Homer B. Metzger, 207 Winslow Hall; Arts and Sciences, Professor R. B. Thomson, 15 North Stevens; Business, Assistant Professor Jacob Naor, South Stevens; Education, Professor G. H. Davis, 132 Shibles Hall; Technology, Professor R. C. Hill, 112 Boardman Hall.

Council—The University Honors Council, consisting of the Vice President for Academic Affairs as chairman, the secretaries of the College Honors Committees, three at-large faculty members, and four students nominated by the Organization of Honors Students, administers the common program of the first two years and coordinates the work of the College Honors Committees. All questions in regard to the University Honors Program should be addressed to Professor Thomson, 15 North Stevens, Director of the University Honors Program.

Descriptions of honors courses will be found in the Arts and Sciences section of the catalog.

STUDENT GOVERNMENT

Student Government at UMO is coordinated by the president and vice president of the student body. Student Government has access to any and all university offices. The Student Government works closely with the office of the Dean of Student Affairs. The Student Government reports recommendations concerning students to the Orono Council of Colleges, UMO president, the chancellor, and the board of trustees. The president of Student Govern-

ment is responsible for about 200 student appointments to various university committees. These committees are concerned with such areas as discipline, residence halls, student-faculty relations, calendar, traffic, athletics, and many more.

Student Government is organized into seven boards, and the General Student Senate. The activities of Student Government are coordinated by the finance committee in financial matters and the executive committee in other areas. Each committee has representatives from the various boards of Student Government.

The legislative body of Student Government is the general Student Senate. It is a geographically apportioned body representing all students. Elections for the General Student Senate are held in the fall of each year. The Senate sets policy for Student Government, and is responsible for distribution of the Student Activities Fee.

The major boards of the Student Government are:

Off-Campus Board — Provides programs and services for off-campus students. These include a food co-op, a tenants' union, and a housing file.

Inter-Dorm Board — Provides programs and services for dormitory students. These include refrigerator rental and many social programs.

Fraternity Board — Provides programs and services for fraternity students. These include Greek Weekend and coordination of other fraternity activities.

MUAB — Provides for programming in the Memorial Union.

Student Services Board — Coordinates many student services provided by student government.

Student Activities Board — Includes the Distinguished Lecture Series and the Concert Committee.

Community Action Board — Includes outreach programs such as PIRG, the Women's Center and the Student Action Corps.

Student Government also provides a pre-paid legal services program for students. This program has a full-time attorney and a large staff.

The Student Government Center is located on the top floor of the Memorial Union. The office is open during the day. Feel free to stop by at any time and get acquainted with those involved in Student Government.

Scholastic Honor Societies—These groups recognize attainment and promise in the academic field by selecting for membership undergraduates whose accumulative point averages are not lower than 3.0 after completing five or more semesters of college work or 3.3 after completing less than five semesters. The date indicates when the chapter was established at the University.

Phi Kappa Phi (1900)—All colleges

Tau Beta Pi (1911) Engineering

Phi Beta Kappa (1923)—College of Arts and Sciences

Alpha Lambda Delta (1970)—Freshman Women

Omicron Nu (1931)—Home Economics

Kappa Delta Pi (1932)—College of Education

Sigma Xi (1948)—Scientific research

Student Organizations—A complete listing of departmental and professional honor societies, departmental clubs, and other student organizations appears in the *Student Handbook*.

Musical Organizations—Students have many opportunities to continue their musical training and experience, either through the degree programs in music (details of these programs are listed under the College of Arts and Sciences and the College of Education), or through participating in any of the several organizations either for credit or non-credit. There are also smaller instrumental ensembles for the more advanced musicians.

For a description and course numbers of the following musical organizations, see the music courses listed in the College of Arts and Sciences section of this catalog.

University Singers—U of M's most select choral organization; 52 mixed voices selected from applicants who have had considerable singing experience. This group sings extensively on the campus and throughout the state during the school year. The literature it performs embraces all periods of music history—Renaissance through the most recent contemporary. Touring itinerary frequently includes appearances outside the state.

University Orchestra—Composed of students for the purpose of preparing and performing standard orchestral repertoire. At least four concerts are presented annually. The spring concert features student soloists in a concerto program.

Oratorio Society—A choral organization of approximately 85 singers specializing in performing larger works with orchestra and soloists.

Concert Band—A well-balanced unit of 75 students carefully selected from the Orono campus that performs the finest available band literature. Both music and non-music majors are invited to audition; there are three rehearsals per week. The regular activities of the Concert Band include formal winter and spring concerts, a state band clinic, and a spring concert tour.

Marching Hundred—U of M's elite marching band of 100 musicians plus majorettes, "Honeybears," and drum major. Personnel are chosen from the Concert Band, Varsity Band, and incoming freshmen. Rehearsals begin shortly before the opening of the fall term.

Chamber Singers—A small group of mixed voices specializing in vocal music especially written for this performing medium. Several appearances during the year, both on and off campus.

Varsity Band—Plays good band music on a more informal basis; a training group for the Concert Band. The Varsity Band provides music at home basketball games in addition to at least one off-campus game.

University Chorus—Primarily for the inexperienced singer who wishes to acquire sufficient background for participation in other choral organizations.

Ensembles: Brass, Woodwind, String—Limited participation by qualified students for study and performance of chamber music written especially for small ensembles.

20th Century Ensembles—An improvisational group concentrating on instrumental music of the 20th century.

Opera Workshop—For those singers who wish to participate in opera theater productions. Full-scale operas from standard repertoire are staged and presented through a collaborative effort of the Department of Music and the Maine Masque Theatre.

Maine Masque Theatre—As the University Theatre, it is an integral part of the academic and co-curricular program of the School of Performing Arts. The theatre provides an opportunity for all students to participate in every aspect of theatrical production, including stage and house managing, lighting, costuming, acting, directing, publicity, scenery, properties, and makeup. As a contribution to the cultural growth of the University community, the theatre offers productions which cover the full range of dramatic expression. Membership in the Maine Masquers, a local theatre honor society, may be gained through participation in the theatre's program.

Debate and Forensics—The University forensic program provides opportunities for experience in debate, discussion, extemporaneous speaking, oral interpretation, and original oratory. The program, under the administration and supervision of the Department of Speech, is open to all undergraduate students. Representatives participate in intercollegiate competition with major colleges and universities from the entire United States. Membership in the Maine Debating Council and Pi Kappa Delta may be obtained through participation in forensic activities.

Radio and Television—Students from the entire University have an opportunity, through working on stations WMEB-FM and WMEB-TV, to participate in all phases of radio and television broadcasting. With studios in 275 Stevens Hall, WMEB-FM is operated with a faculty manager and student staff as an integral part of the academic and co-curricular program of the School of Performing Arts. WMEB-TV, operated by the Maine Public Broadcasting Network, has studios in Alumni Hall. The varied program enables the student to gain valuable experiences in engineering, programming, announcing and writing.

Student Publications—The University's regular student publications are:

The Maine Campus, a newspaper published bi-weekly.

The Prism, an illustrated annual.

Maine Review, a literary magazine published semi-annually.

The Student Publication Committee, a joint faculty-student group, is the publishing board for all the University's student publications.

Social Fraternities and Sororities—The following fraternities and sororities have chapters at the University. The figures in parentheses are the dates they were established.

Fraternities—National: Beta Theta Pi (1879), Kappa Sigma (1886), Alpha Tau Omega (1891), Phi Kappa Sigma (1898), Phi Gamma Delta (1899), Sigma Alpha Epsilon (1901), Sigma Chi (1902), Theta Chi (1907), Delta Tau Delta (1908), Lambda Chi Alpha (1913), Sigma Nu (1913), Alpha Gamma Rho (1924) Tau Epsilon Pi (1929), Sigma Phi Epsilon (1948), Tau Kappa Epsilon (1948), Delta Upsilon (1970). Local Phi Eta Kappa (1906).

Sororities—National: Alpha Omicron Pi (1908), Phi Mu (1912), Delta Delta Delta (1917), Pi Beta Phi (1920), Chi Omega (1921), Delta Zeta (1924), Alpha Chi Omega (1958), Alpha Phi (1963), Alpha Delta Pi (1968), Sigma Kappa (1968).

Admission

All correspondence concerning undergraduate admission at the Orono campus should be addressed to the Director of Admissions, Alumni Hall, University of Maine, Orono, Maine 04473.

Applicants interested in the Bangor Community College of UMO should write directly to the Director of Admissions, Bangor Community College, Bangor, Maine 04401. (See section on Bangor Community College for programs and admission requirements)

Applicants for admission to the Graduate Division should write to the Dean of the Graduate School, Winslow Hall, University of Maine, Orono, Maine 04473.

A Social Security number is required of all U.S. applicants. Foreign students will be assigned a similar number.

ADMISSION TO THE FRESHMAN CLASS—ORONO

The approval of candidates for admission is on a selective basis. The University is interested in candidates whose preparatory program, scholastic achievement, aptitudes, interests, character, health, and established study habits give definite promise of success in a senior college program. The University admits men and women, both residents of Maine and non-residents; it reserves the right to terminate admissions whenever the capacity of the University to care properly for the students has been reached.

The candidate is required to submit a carefully answered questionnaire concerning favorite studies, school activities, community interests, hobbies, choice of college course and other matters bearing upon preparation for a college program. This information is required so that the University may better guide the student in selecting courses of study best suited to his individual abilities, aptitudes, and interests.

All four-year degree candidates are required to submit the scores on the College Entrance Examination Board Scholastic Aptitude Test (S.A.T.), and the scores on three C.E.E.B. Achievement Tests. (For details, see section concerning the C.E.E.B. which follows.)

Candidates for admission to the freshman class should file their applications in the fall of the year prior to the date they plan to begin their studies.

The required application forms (which are revised each summer) may be obtained by writing to the Director of Admissions on or after Sept. 15. Application forms are also available in Maine high school guidance offices. *A non-refundable application fee of \$10 is required of all applicants.* Applicants must apply for admission prior to March 1 for equal consideration with other candidates. Applications received after this date will be marked "Late" and considered only as classroom and dormitory capacities allow.

Candidates for the freshman class normally are accepted for the opening of the academic year in September. (It is not our policy to admit transfer freshmen in the middle of the academic year.) The priority of the housing assignment is based primarily on the date of formal acceptance by the Committee on Admissions. *Certificates of admission issued prior to the completion of the current school year may be rescinded if the final report in June is unsatisfactory.*

SCHOLASTIC APTITUDE AND ACHIEVEMENT TESTS

All candidates for admission to four-year degree programs and the associate degree programs in Engineering Technology at the Orono campus are required to take the Scholastic Aptitude Test (S.A.T.) and three Achievement Tests administered by the College Entrance Examination Board. Candidates are urged to take the November, December and/or January tests. The Achievement Tests should include English composition, (Level I Mathematics is also required of all engineering candidates) and two other tests of the candidates's choice, or as recommended by the Director of Admissions. Veterans need only take the Scholastic Aptitude Test (S.A.T.).

Candidates for the two-year technical programs in the College of Life Sciences and Agriculture (Orono) are required to take the Scholastic Aptitude Test only.

High school juniors are encouraged to take achievement tests in *non-continuing subjects* on the May testing date. Guidance counselors should be consulted prior to registering for such tests.

Arrangements to take the C.E.E.B. Tests should be made by writing to the College Entrance Examination Board, P.O. Box 592, Princeton, New Jersey, for application forms and information. *Arrangements must be made at least one month before the testing date.* Application forms and information may be obtained from high school guidance counselors.

The College Entrance Examination Board will administer tests on each of the following dates.

Note: Either the S.A.T. or Achievement tests may be taken only on the *mornings* indicated.

Saturday, November 6, 1976

Saturday, December 4, 1976

Saturday, January 22, 1977

Saturday, March 26, 1977

Saturday, May 7, 1977

Saturday, June 4, 1977

Official test reports from the Education Testing Service are required.

ADVANCE PLACEMENT

In certain subjects, candidates who have completed advanced work in secondary schools may apply for advanced placement and credit at the University of Maine. Candidates interested in advanced placement and credit must take one or more of the Advanced Placement Tests or the C.L.E.P. (College Level Examination Program) tests administered by the College Entrance Examination Board. Each case will be considered individually on its own merits.

Information concerning our C.L.E.P. policies may be obtained from the Admissions Office.

Candidates who have had training and/or experience in certain professional or semi-professional fields may apply for advanced placement and credit at the University of Maine at Orono. Candidates interested in such placement and credit may take either appropriate standardized tests, such as those prepared by the College Entrance Examination Board (College Level Examination Program—C.L.E.P.), or examinations especially developed by the academic unit concerned.

VETERANS ADMINISTRATION INFORMATION

The University is prepared to help servicemen or women and children of deceased veterans with their educational plans. Requests for information concerning veterans' educational privileges should be forwarded to the Veterans Affairs Office, Fernald Hall, University of Maine, Orono, Maine 04473. Correspondence should be marked "Veterans Information."

Former students of the University as well as prospective students should submit their application for admission to the Director of Admissions. Application for a certificate of eligibility should be made at a Regional V.A. Office.

SPECIAL LIVING ARRANGEMENTS (ORONO CAMPUS)

Applications for residence in Colvin Hall, women's cooperative dormitory, and the University Cabins for men, should be included with the application for admission. The necessary forms (financial aid) may be obtained from the Director of Admissions or from the Director of Student Aid, Wingate Hall.

Unmarried freshman students shall live in one of the University housing units unless they can live at home. Exceptions to this rule should be requested in writing to the office of Residential Life, Estabrooke Hall.

FINANCIAL AID AND SCHOLARSHIPS

Applications for financial grants, loans under the National Direct Education Loan Plan, for participation in the Work-Study Program under the Economic Opportunity Act of 1964, and assistance under the Higher Education Act of 1965 may be obtained from the Office of Student Aid, Wingate Hall. Parents or legal guardians of all applicants for financial aid are required to file a Parents' Confidential Statement with the College Scholarship Service. Forms and information are available in each local high school. Requests for aid will be reviewed by the committee after the applicant has been formally notified of acceptance by the Director of Admissions. The University financial aid form should be filed before March 1, and preferably at the time the admission application is filed.

The University participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in CSS subscribe to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists college and universities and other agencies in determining the student's need for financial assistance. Entering students seeking financial assistance are required to submit a copy of the Parents' Confidential Statement (PCS) form to the College Scholarship Service, designating the University of Maine at Orono as one of the recipients. The PCS form may be obtained from a secondary school or the College Scholarship Service, P.O. Box 176, Princeton, New Jersey 08540 or P.O. Box 1025, Berkeley, California 94704. This form should be completed by January 1.

Upperclass students may apply annually during designated periods for all types of financial assistance. Applications and PCS forms are available at the Office of Student Aid.

Part-time work opportunities, both on-campus and off-campus, are available to students. From applications filed each year, the Office of Student Aid refers students to suitable job openings as they are received. A satisfactory academic standing must be maintained during the working period.

A specially prepared brochure entitled Financial Aid is available from the Director of Student Aid upon request. Detailed descriptions of all types of financial aid programs are included.

**MINIMUM REQUIREMENTS FOR ADMISSION
COLLEGE OF ARTS AND SCIENCES**

English	4 units
Foreign Language	2 units in one language
Algebra	2 units
Plane Geometry	1 unit
History or Social Science	1 unit
Electives†	6 unit
<hr/>	
Total	16 units

†Chemistry is recommended as an elective for Science, Medical Technical and similar curricula, and required for the Nursing program.

‡½ unit in Trigonometry is recommended for students who plan to major in Mathematics or Science.

COLLEGE OF BUSINESS ADMINISTRATION

English	4 units
Algebra	2 units
Plane Geometry	1 unit
History or Social Science	1 unit
Electives	8 units
<hr/>	
Total	16 units

COLLEGE OF EDUCATION

(Includes curriculum in Physical Education)

English	4 units
Three units from one and two units from another of the following:	
(Foreign Languages)	
(Mathematics)	
(Natural Sciences)	5 units
(Social Studies)	
Electives	7 units
<hr/>	
Total	16 units

United States History, Natural Sciences, and two units of Mathematics are recommended. Algebra I and II and Plane Geometry are required of those students who wish to prepare for teaching mathematics or science.

COLLEGE OF LIFE SCIENCES AND AGRICULTURE

1. Animal Sciences, Plant and Soil Sciences, Agricultural and Resource Economics, Agricultural Engineering, Agricultural Mechanization, Biological Sciences, School of Forest Resources.

English	4 units
Algebra	2 units
Plane Geometry	1 unit
Trigonometry (Agric. Engineering only)	½ unit or its equivalent

Science	2 units (one of which must be chemistry or physics)
History or Social Science	1 unit
Electives	5½-6 units
<hr/>	
Total	16 units
II. School of Human Development:	
English	4 units
Mathematics*	2 units (at least 1 yr. of algebra)
Science*	1 unit (chemistry recommended)
History or Social Sciences	1 unit
Electives	8 units
<hr/>	
Total	16 units

*Alg. 1, 2, plane geometry and chemistry required for Food and Nutrition majors.

III. Two-Year (Associate Degree) Technical Division, College of Life Sciences and Agriculture (Orono Campus): Candidates for admission to the two-year technical programs in Life Sciences and Agriculture must have graduated from high school. In exceptional cases, mature individuals who are not high school graduates may be admitted by special permission. Candidates for the two-year program in Forest Mgt. Tech. should have completed Algebra I & 2 and Plane Geometry. Students who contemplate later transfer to a four-year program must satisfy entrance requirements for the College of Life Sciences and Agriculture listed above.

COLLEGE OF ENGINEERING & SCIENCE

I. English	4 units
Foreign Languages	(Two or more units in one language recommended but not required)
Algebra	2 units
Trigonometry	½ unit or its equivalent (not required for two-year engineering technology programs—See below)
Plane Geometry	1 unit
Chemistry or Physics	1 unit (both recommended)
History or Social Science	1 unit
Electives	6½-7 units
<hr/>	
Total	16 units

In addition to these course requirements, applicants must further qualify themselves by satisfactory performance on the Level I Mathematics Achievement Test administered by the College Entrance Examination Board.

II. School of Engineering Technology (Orono campus only): Candidates for admission to one of the Engineering Technology Programs must have completed the same courses as required of the four-year B.S. degree candidates with the exception of trigonometry. Also, candidates are required to complete the C.E.E.B. Scholastic Aptitude Test and three Achievement Tests (English Composition, Level-I-Math., and Physics or Chemistry).

ADMISSION TO THE CONTINUING EDUCATION COURSES

The University of Maine has undertaken a broadened program of adult education at various locations throughout Maine. This program includes credit courses, non-credit courses, short, and conferences as appropriate.

The categories of admission under the programs in Continuing Education are:

1. Degree Program Admission—Regular admission requirements are in effect for both undergraduate and graduate degree applicants. Applications should be filed with the Director of Admissions (undergraduate degree status) or with the Dean of the Graduate Division.
2. Special Students—Special students are those who have not made formal application for degree status but are interested in registering for courses through the Continuing

Education Division (C.E.D.). These students must satisfy prerequisites for any course in which they enroll.

Many special students have the long range objective of earning a baccalaureate degree. Others have short range objectives and enroll in courses that offer vocational or cultural interests.

Students planning a degree program are required to arrange an appointment with a C.E.D. administrator to formulate future academic plans. Students whose objectives are more short ranged are strongly urged to arrange an appointment at the C.E.D. office.

Information and application forms may be obtained by writing the Director, Continuing Education, Merrill Hall, University of Maine, Orono, Maine 04473.

FORMER STUDENTS

Former students who desire to return to the Orono campus must file an early application (at least six weeks prior to the opening of classes) for readmission with the Director of Admissions. The applicant must arrange for official transcripts and catalogs to be forwarded to the Director of Admissions from all schools and colleges attended since leaving the University. A readmission application form may be obtained from the Admissions Office.

The request for readmission by a former student is reviewed and acted upon by the Academic Standing Committee in the College to which the student has applied.

ADMISSION BY TRANSFER

The admission of transfer students is necessarily carefully controlled. Admission is on a selective basis.

A student desiring to transfer to the University of Maine at Orono from another college of recognized standing must file application with the Director of Admissions at least five months before the opening of the semester. This request must include a statement of the names and addresses of all schools and colleges attended as well as information indicating the desired curriculum.

The applicant must arrange for official transcripts and catalogs to be forwarded from all previously attended junior colleges, colleges, and universities to the Director of Admissions, University of Maine, Orono, Maine 04473.

The evaluation of transcripts of academic work completed at institutions previously attended must be accepted as final at the time of enrollment.

ADMISSION OF SPECIAL AND SHORT COURSE STUDENTS

In exceptional cases, and when space permits, a mature person who presents satisfactory evidence of ability to benefit from work of a special college program may be admitted to the university as a special student. Such students are not candidates for degrees but will be registered in the college where the principal courses in their program are taught. Application forms may be obtained from the Director of Admissions.

NEW ENGLAND REGIONAL COOPERATION

New England's state universities and colleges are working together to increase the number and variety of educational opportunities for the young people of the region. Under this cooperative program, qualified New England residents are given preferred admission at other state institutions in certain specialized programs not available in their own states. Students accepted in these programs are also granted the benefit of in-state or resident tuition and fees which are considerably lower than those usually charged out-of-state students. This plan makes available to the residents of the region a wider variety of programs at low cost — without additional funds being spent to duplicate specialized staff and expensive facilities in each state.

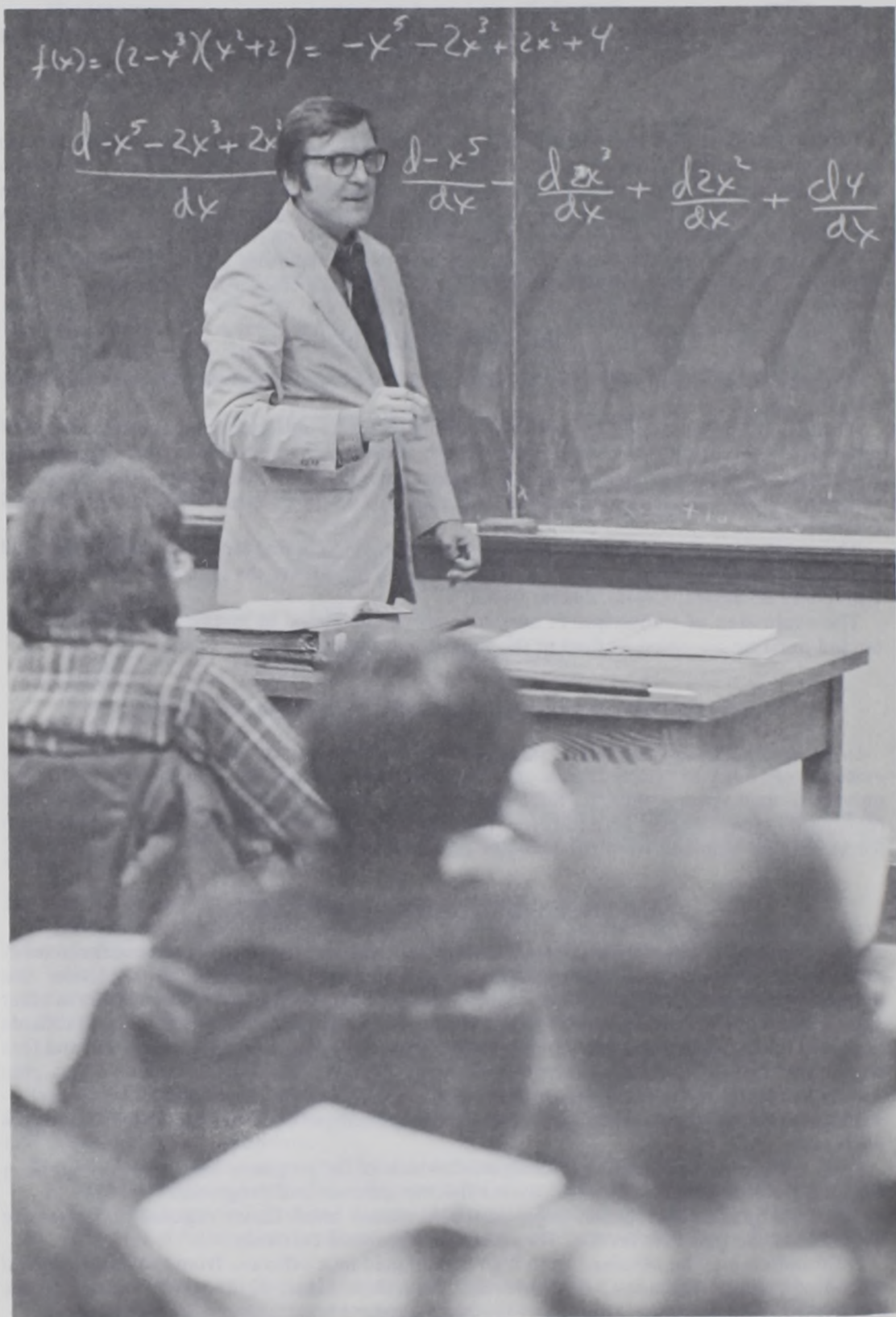
Each college or University has designated which of its programs are to be offered on a regional basis and maintains control over its own courses and programs.

The undergraduate programs begin at the freshman level. Other regional programs are available at the graduate level or for certain professional curricula.

Information may be obtained from high school guidance officials, from the New England Board of Higher Education, 40 Grove St., Wellesley, Mass. 02181; or by writing to the Director of Admissions at any one of the New England state universities or colleges.

ACCREDITATION

The University of Maine at Orono is accredited by the New England Association of Schools and Colleges. The New England Association of Schools and Colleges accredits schools and colleges in the six New England states. Membership in one of the six regional accrediting associations in the United States has been carefully evaluated and found to meet standards agreed upon by qualified educators. Colleges support the efforts of public school and community officials to have their secondary schools meet the standards of membership.



Financial Information

STUDENT EXPENSES

The student expenses outlined in the following paragraphs are the anticipated charges for the academic year 1976-77. Changing costs may require an adjustment of these charges.

Tuition and Fees for the Academic Year*

	Residents of Maine	Non-Residents of Maine
Regular Students Tuition	\$675.00	\$2050.00

Estimate of Student Expenses

A partial list of necessary expenses for a semester is indicated below. It includes only items which are fairly uniform for all students.

	Residents of Maine	Non-Residents of Maine
Rates for One Semester Tuition	\$337.50	\$ 1025.00
Board and Room (University Dormitories) (7-day meal plan)	802.50	802.50
	<hr/> \$1140.00	<hr/> \$1827.50

Tuition Rate for Bangor Community College
and Orono Two-Year Programs

\$287.50

\$912.50

Textbooks, personal laboratory equipment, etc., are not furnished by the University and are estimated to cost from \$90 to \$160 per year.

A *student* fee for the support of student governmental organizations is now levied by the University and is incorporated in the semester bills.

The University provides a student health and accident insurance plan on a voluntary basis for 12 months following fall registration. The insurance is charged to every fully enrolled student on the fall semester bill.

Matriculation Fee—This fee of \$15 is required of all students registering for the first time who are candidates for a degree. It must be paid as part of the first term bill.

All students who are not registered for 10 or more credit hours are charged a \$5 registration fee.

Payment of Bills—All University bills, including those for rooms and board in University buildings, are due and payable *on or before* registration day for each semester. An academic year consists of two semesters, fall and spring.

*The financial requirements of the University, changing costs, state and legislative action and other matters may require an adjustment of these charges and expenses. The University reserves the right to make such adjustments to the estimated charges and expenses as may from time to time be necessary in the opinion of the Board of Trustees up to the date of Final Registration for a given academic term. The applicant acknowledges this reservation by the submission of an application for admission or by registration.

Installment Plans—Students and parents who prefer to pay their educational costs on an installment basis may do so. The University has made arrangements with Academic Service Management, Inc. for the following plan which may be used by both student and parent. An application for the installment plan must be obtained from the Business Office, Alumni Hall. The application and a \$25 participation fee (non-refundable) is to be mailed to AMS, 1110 Central Avenue, Pawtucket, R.I. 02861, on or before June 1. AMS will bill the parent or student in ten (10) equal installments for the total yearly cost of education at the University. The total cost of this plan is \$25 per year. There are no other costs.

	Maine Resident	Non-Resident
Tuition	\$ 675.00	\$2050.00
Insurance	30.50	30.50
Student Fee	20.00	20.00
Yearbook	10.00	10.00
Total for off- campus students	<hr/> \$ 735.50	<hr/> \$2110.50
Room and Board	1605.00	1605.00
Total for students living on campus	<hr/> \$2340.50	<hr/> \$3715.50

Sample payment for a Maine resident living in a dormitory

June 1, 1976—Participation Fee	25.00
June 8, 1976	234.05
July 8, 1976	234.05
Aug. 8, 1976	234.05
Sept. 8, 1976	234.05
Oct. 8, 1976	234.05
Nov. 8, 1976	234.05
Dec. 8, 1976	234.05
Jan. 8, 1977	234.05
Feb. 8, 1977	234.05
Mar. 8, 1977	234.05

Sample payments for a non-resident living in a dormitory

June 1, 1976—Participation Fee	25.00
June 8, 1976	371.55
July 8, 1976	371.55
Aug. 8, 1976	371.55
Sept. 8, 1976	371.55
Oct. 8, 1976	371.55
Nov. 8, 1976	371.55
Dec. 8, 1976	371.55
Jan. 8, 1977	371.55
Feb. 8, 1977	371.55
Mar. 8, 1977	371.55

All incidental and additional charges must be paid directly to the University. Any refunds will be paid by the University directly to the parent or student.

Additional information may be obtained by writing the University of Maine, Business Manager, Alumni Hall, Orono, Maine.

Freshman Charges—The following table shows the fixed charges for the fall semester for freshmen:

	Residents of Maine	Non-Residents of Maine
Tuition	\$ 337.50	\$ 912.50
Room and Board (University Dormitories)* (7-day meal plan)	802.50	802.50
freshman Orientation Period* *	32.00	32.00
Matriculation Fee	15.00	15.00
Insurance	30.50	30.50
	\$1217.50	\$1792.50

For freshmen who do not room and board in University dormitories, the charge is \$415.00 for residents of Maine and \$990.00 for non-residents.

Under certain circumstances, courses may be auditioned by qualified individuals. A tuition charge of the usual rate is made for an 'audit' registration unless a student is already registered full-time. Matriculated students register for a course on an audit basis through an academic adviser and academic dean. Others should consult the Admissions Office for instructions and specific prior approval.

All fully-enrolled students may avail themselves of the services provided by the University Health Service.

Room and Board—The charge for room and board in the permanent dormitories for the fall semester, 1976, is \$802.50. The charge for room and board in Hannibal Hamlin Hall for the fall semester, 1976, is \$752.50. These costs are based on the 7-day meal plan. A 5-day meal plan is available for \$30 less per semester.

In the cooperative dormitories for women, the charge for room and board is based upon student effort in management and operation, and is at less than regular rates.

All University dormitories are closed to students during scheduled vacation periods.

Miscellaneous—A fee of \$10 is charged a student who registers after the prescribed day of registration.

* See statement under Room and Board.

* * Maximum (may vary according to room and board provided)

The fees for students registered in Applied Courses in Music are indicated in the catalog section on Music.

Deposits—A deposit of \$25 is due when the applicant is notified of acceptance by the Director of Admissions. If a dormitory room is required, an additional \$25 is due. These deposits will be applied toward the student's account when he registers. (They should not be confused with the matriculation fee of \$15, which is a non-refundable charge.)

If a freshman, transfer, or readmission applicant notifies the Director of Admissions of withdrawal prior to June 1, the deposits will be refunded. *The deposits are forfeited in case of withdrawal after June 1.*

All upperclassmen desiring to live in a dormitory must pay a room deposit of \$25 during the spring in order to assure that rooms will be reserved for them in the fall. This deposit will be deducted from the fall semester bill. If it is found that dormitory accommodations are not desired the deposit will be refunded if the Housing Office is notified by August 1. If notice is not given by that date the deposit will be forfeited.

Locks for gymnasium lockers may be secured from the Physical Education Department and must be returned at the end of the spring semester. No deposit is required, but a charge of \$2.50 is made if the lock is not returned at the end of the year.

Refunds—Students leaving the University before the end of a semester will receive refunds. Tuition payment refunds will be paid as follows:

Educational and General Programs (Other than Summer Session)

1. **Tuition**—Tuition may be refunded in accordance with the scale and provisions set forth below for students withdrawing during the first nine weeks of a term.

a. **Scale**—Attendance period is counted from first day of class and includes weekends and holidays. The refund will be reckoned from the date on which the student notifies the Registrar.

	Refund Percentage
1st week	80%
2nd week	60%
3rd week	40%
4th week	30%
5th week	20%
over 5th week	No Refund

b. **Provisions**

- (1) A student enrolled in a full-time program who drops or adds a course and continues to be in a full-time program will have no financial adjustments of tuition.
- (2) In no case will tuition be reduced or refunded because of voluntary absence from classes.
- (3) Tuition adjustments attributable to involuntary absence, e.g., extended illness and military service, will be processed by the respective campus on a case by case basis.

2. **Fees**—University fees are not refunded.

A room and board refund, approximately the cost of raw food, will be made for each day remaining in the semester.

Summer Forestry Camp—The charges for Summer Forestry Camp (near Princeton, Maine) described in the catalog section on Forestry are

Registration Fee	\$5.00
Tuition	\$180.00

Room and board and course fee Fy 19 S are assessed in addition to the above charges.

Rules Governing Residence

A student is classified as a resident or a non-resident for tuition purposes at the time of admission to the University. The decision, made by the appropriate campus Business Manager, is based upon information furnished by the student's application and any other relevant information. No student once having registered as an out-of-state student is eligible for resident classification in the University, or in any college thereof, unless he has a bona fide domiciliary of the state for at least a year immediately prior to registration for the term for which resident status is claimed. This requirement does not prejudice the right of a student admitted on a non-resident basis to be placed thereafter on a resident basis provided he has acquired a bona fide domicile of a year's duration within the state. Attendance at the

University neither constitutes nor necessarily precludes the acquisition of such a domicile. For University purposes, a student does not acquire a domicile in Maine until he or she has been here for at least a year primarily as a permanent resident and not merely as a student. If the student is enrolled for a full academic program, as defined by the University, it will be presumed that the student is in Maine for educational purposes and the burden will be on the student to prove otherwise. In general, members of the Armed Forces and their dependents are normally granted in-state tuition rates during the period when they are on active duty within the State of Maine.

Subject to the provisions of the preceding paragraph, the domicile of an unmarried minor follows that of the parents or legally appointed guardian. The bona fide year-round domicile of the father if living, otherwise that of the mother, is the domicile of such a minor, but if the father and the mother have separate places of residence, the minor takes the domicile of the parent with whom he lives or to whom he has been assigned by court order. If neither of the parents is living, the unmarried minor takes the domicile of his legally appointed guardian.

Subject to the provisions of the first paragraph, an adult student, defined for the purposes of these rules as one who is either married or 18 years of age or older, will be classified as a resident of Maine if he or she completed 12 continuous months of domicile in Maine immediately preceding registration for the term for which resident status is claimed.

Subject to the provisions of the first paragraph, if a non-resident student has a spouse who has a residence in Maine, the student shall be deemed to have a residence in Maine.

To change resident status, the following procedures are to be followed:

- A. Submit "Request for Change of Residence Status" form to the Business Manager. If the Business Manager's decision is considered incorrect
- B. The student may appeal the Business Manager's decision in the following order
 1. Vice President for Finance and Administration—where applicable
 2. President
 3. Vice Chancellor for Administration—University of Maine, Chancellor's Office (This decision must be considered final.)

In the event that the campus Business Manager possesses facts or information indicating a change of status from resident to non-resident, the student shall be informed in writing of the change in status and will be given an opportunity to present facts in opposition to the change. The student may appeal the Business Manager's decision as set forth in the preceding paragraph.

No application will be considered for change after September 1 for the fall semester and January 1 for the spring semester.

All changes approved during a semester will be effective the beginning of the next semester; none are retroactive.

In all cases, the University reserves the right to make the final decision as to the resident status for tuition purposes.

Communications

Communications with reference to financial affairs of students should be addressed to the Business Manager of the University of Maine at Orono. Matters concerning all types of financial assistance should be referred to the Director of Student Aid.

STUDENT AID

The University of Maine at Orono administers a variety of assistance programs to help students finance their education. It is fundamental principle of financial aid that students' first resources must be their own earning capacity, followed by the income and assets of their immediate families. A student who believes these resources will be inadequate should not hesitate to apply for aid. Applications may be obtained at any time by request to either the Admissions Office or Student Aid Office at Orono. Independent students and married students should consult with the Student Aid Office before applying to be certain that their special circumstances are considered.

Awards, including scholarships, are determined on the basis of need, without regard to race, sex, religious beliefs, place of origin or academic capability. Some funds, however, may specify certain qualifications designed to correct imbalanced minority or other representation in our student body. Eligibility criteria for all funds may be reviewed by referring to the University of Maine at Orono Scholarship and Loan Directory.

To enable the University to make proper judgment as to the amount and kind of assistance a student needs, a financial statement must be filed, along with the application for assistance. If a student is an applicant for admission to the freshman class he may obtain a Parents' Confidential Statement from his high school or by writing to College Scholarship Service, Box 176, Princeton, N.J. 08540. Students already enrolled, graduate students, and other applicants must file a Student Financial Statement available at the Student Aid Office, Wingate Hall, University of Maine, Orono, Maine 04473, or Admissions and Counseling Building, Student Services Center, Bangor Community College of UMO. The usual application deadline for an academic year is March 1.

University Scholarships—These are based primarily on need, but academic potential may be an additional criterion. Scholarships awarded through the Student Aid Office are primarily for undergraduates. Graduate students should apply through the Graduate School or the chairmen of their respective departments.

Federal Scholarships (Supplementary Educational Opportunity Grants)—Only undergraduates are eligible. These are grants made available by the University of Maine from federal funds to students who meet certain low family income standards. Grants range from \$200 to \$1,500 per year and are renewable upon reapplication as long as need continues.

Other types of federal grants may also be available through the Basic Opportunity Grant Program. Inquire at your high school guidance office or the University Student Aid Office.

Indian Scholarship Program—Assistance in the form of tuition and room and board is available to residents of Maine (one year or more) who are on a tribal census or who had a parent or grandparent on such a tribal census of a North American Indian tribe. Contact the Student Aid Office for further details.

Nursing Scholarship Program—The Department of Health Manpower provides funds to the University of Maine for a Nursing Scholarship Program. Awards are made on the basis of need, as determined by the Parents' Confidential Statement. Under this program the maximum award that can be made to a student is \$1,500 per year.

Law Enforcement Program—This federally funded program provides assistance for students who are presently employed by a publicly funded local, state, or federal law enforcement program. Up to \$1,800 a year may be borrowed by students who, during their course of study, earn 15 semester credits in subjects "directly related" to law enforcement. Some grants are also available in this program.

Federal Work-Study Program (Summer and Part-Time)—With the assistance of federal funds, the University is able to provide many employment opportunities either on the campus or in various off-campus agencies, in many cases in the student's home community, even in other states. Some of these jobs provide work experience directly related to the student's educational objective, while at the same time providing regular income for educational expenses. Eligibility is based on need, and earnings must be related to total educational costs. Incoming freshmen (after acceptance) are eligible for summer work before their freshman year.

Higher Education Loan Program

Accepted entering freshmen and currently enrolled students may apply for loans under this program through commercial banks, credit unions or other lending institutions, preferably in their home community.

While individual bank policies vary as to amounts of loans allowed, federal regulations limit loans to a \$2,500 annual maximum. The total accumulative outstanding loan may not exceed \$7,500 for an undergraduate or \$10,000 for a graduate student. Extended repayment periods after graduation and modest interest rates are major features of this program.

National Direct Student Loans—These loans are awarded directly by the University. Amounts awarded are based on the student's need. Undergraduates are limited to a maximum of \$5,000 for four years. Graduate students may borrow up to \$10,000 total, including their undergraduate loans. No interest is charged on loans until repayment begins. Ordinarily a repayment period of 10 years is permitted, at an interest charge of 3% on the unpaid balance, beginning nine months after graduation. Grace periods of three years' payment of capital or interest are allowed for military service, Peace Corps service and VISTA service. Also, no payments are required as long as the student remains at least a half-time student at either the graduate or undergraduate level.

Cancellation of the loan amount, plus interest, is granted to those who become full-time teachers in elementary or secondary education in "deprived" areas and to teachers of the handicapped. Cancellation for such teaching service shall be at the rate of 15% for the first and second year, 20% for the third and fourth year and 30% for the fifth year so taught. Teachers in Head Start programs may also receive cancellation benefits but only at the rate of 15% per

year up to the total loan amount. An annual 12½% cancellation is granted for military service up to a total of 50% of the amount owed for each year served in an area of hostilities. Loans are awarded on an academic-year basis only and must be reapplied for each year. They are not automatically renewed. These regulations may be changed from time to time by the Office of Education.

Nursing Student Loans—Nursing students may apply for up to \$1,500 per academic year. Amounts awarded will be based on the student's need. No interest is charged on loans until the repayment period begins. A repayment period of 10 years is permitted with interest of 3% charged on the unpaid balance. Repayment begins nine months after graduation with a period of grace allowed for time spent in full-time graduate study, active duty in military service or Peace Corps service. Provisions for cancellation of loan amounts are included in the federal regulations. Inquire about this at the aid office.

NOTE: The University's estimate of a student's need is based on an analysis of information supplied on the financial statement. Frequently, various forms of assistance must be combined to meet the student's total need. In the event an applicant receives other assistance after the financial statement is received, the University may be required to adjust the total amount of aid promised to a student. It is the student's responsibility to report receipt of such assistance to the Student Aid Office. All financial aid resources are limited in some way, and it is our intent to use these resources in such a way that the greatest number will benefit.

In estimating a student's financial need, the University anticipates that incoming freshmen will save \$500 from their summer earnings in the summer prior to their entrance.

Cooperative Housing Units (Orono)

University loans are awarded to students for educationally related expenses, usually on the basis of need. Repayment begins after graduation. Moderate interest charges are specified at the time the loan is made. Repayment schedules are established by the student and the Business Office. Short term emergency loans are also available

Cooperative Housing Units (Orono)

Colvin Hall—This is a cooperative dormitory for women students, housing approximately 50 undergraduate women. Residents do light housekeeping and help prepare food, resulting in substantially reduced costs.

Cabins—The University operates 10, four-man cabin units for men. A modest per person rental charge is made for each semester. It covers the cost of all utilities and basic furniture. Members of each cabin unit provide and prepare their own meals and perform all housekeeping chores.



Collegiate Descriptions

The following pages, under separate college headings, contain descriptive material for each college, its admission requirements, programs offered, and detailed descriptions of all undergraduate courses for both the associate and baccalaureate degrees.

Some departments have also included graduate level courses. However, for a complete description of the Graduate School, its organization, degrees offered, regulations, and detailed course descriptions, see the current catalog of the Graduate School.

Those desiring information about course offerings through the Continuing Education Division and Summer Session should request current publications from these offices in Merrill Hall.

Beginning in the fall of 1972, some students' permanent academic records will show courses with the symbol IDL. This signifies an *Interdepartmental Listing* of courses sponsored by more than one academic department. For example, in the following list of such courses, *IDL 24-Sociology of Rural Life* and under *Agriculture and Resource Economics* as *IDL 24*.

Registration Symbol	Departments Listing the Course
IDL 19 - Introduction to Ecology	Fy, En
IDL 24 - Sociology of Rural Life	ARE, Ay
IDL 43 - Tropical Agriculture	P, AnV
IDL 65 - Meat Technology	AnV, Fn
IDL 105 - Women of Maine	Ay, Hy, Sh
IDL 106 - Photogrammetry	Ce, Fy
IDL 110 - Introduction to the Study of Linguistics	Ay, Eh, Fl
IDL 114 - Women in Society	Ay, Hy, Py
IDL 124 - Contemporary Rural Problems	ARE, Sy
IDL 129 - The Individual and the Community	ARE, Ay
IDL 130 - Polymer Chemistry	ChE, Ch
IDL 131 - Polymer Structure and Properties	ChE, Ch
IDL 140 - Seminar in Quaternary Studies	Gy, Ay, Bt, P, Zo
IDL 161 - Park Planning and Design	ARE, P
IDL 162 - Recreation and Park Management	Fy, ARE
IDL 170 - Introduction to Oceanography	Oc, Zo
IDL 173 - Forest Roads	AE, Fy
IDL 174 - Forest Machinery	AE, Fy
IDL 185 - Computer Hardware	Ms, EE
IDL 200 - Seminar in Quaternary Studies	Gy, Bt, Ay
IDL 201 - Biological Oceanography	Oc, Zo
IDL 208 - Anatomy and Classification of Fishes	Oc, Zo
IDL 211 - Larval Biology of Marine Invertebrates	Oc, Zo
IDL 225 - Mathematical Economics	Ec, ARE
IDL 230 - Econometrics	Ec, ARE
IDL 237 - The Evolution and Development of Canadian Government and Politics	Hy, Pol
IDL 245 - Late Quaternary Paleoecology	Bt, Gy
IDL 260 - Marine Geology	Oc, Gy
IDL 263 - Marine Benthic Ecology	Bt, Oc, Zo
IDL 264 - Structure and Tectonics of the Ocean Floor	Oc, Gy
IDL 266 - Micropaleontology	Oc, Gy
IDL 267 - Actinopaleontology	Oc, Gy
IDL 268 - Deep Sea Strat. & Paleontology	Oc, Gy
IDL 340 - Ecology Seminar	Bt, En, Fy, Zo

ABBREVIATIONS AND SYMBOLS

ARE	Agricultural and Resource Economics	Bio	Biology
AE	Agricultural Engineering	Bt	Botany
AnV	Animal and Veterinary Sciences	CAN	Canadian American Studies
As	Astronomy	CD	Clothing and Design
At	Art	CE	Civil Engineering
Ay	Anthropology	CF	Child Development and Family Relationships
BA	Business Administration	Ch	Chemistry
Bc	Biochemistry		

ChE	Chemical Engineering	Mb	Microbiology
Cl	Classics	Mc	Microbiology
Cp	Comparative Literature	Mc	Msic
CS	Computer Science	ME	Mechanical Engineering
Ec	Economics	MHE	Man and His Environment
Ed	Education	Ms	Mathematics
EE	Electrical Engineering	Mt	Military
Eh	English	My	Modern Society
En	Entomology	Nu	Nursing
FA	Franco-American Civilization	Oc	Oceanography
FLM	Film Broadcasting	P	Plants
FL	Foreign Languages	Pa	Pulp and Paper Technology
FN	Food and Nutrition	PE	Physical Education
Fr	French	Pl	Philosophy
FS	Food Science	Ps	Physics
FSA	Freshman Seminar Advising	Pol	Political Science
Fy	Forest Resources	Pt	Portuguese
GE	General Engineering	Py	Psychology
Gk	Greek	QS	Quaternary Studies
Gm	German	RTV	Radio and Television
GS	Graduate Readings	RE	Recreation Education
Gy	Geological Sciences	Ru	Russian
HD	Human Development	S	Soils
HE	Home Economics	SE	Systems Engineering
HM	Home Management and Housing	SET	School of Engineering Technology
Hr	Honors	Sh	Speech
Hy	History	SS	Special Seminar
IDL	Interdepartmental Listing	Sp	Spanish
IS	Independent Study	SPA	School of Performing Arts
It	Italian	SW	Social Welfare
Jr	Journalism	Sy	Sociology
LSA	General Life Sciences and Agriculture	TDL	Technical Division of Life Sciences
Lt	Latin	Th	Theatre
Ly	Library Service	Zo	Zoology



Canadian Studies

Canadian Studies is an undergraduate program at the University of Maine at Orono. It can take the form of either a concentration or minor, depending on the college of an individual student. The program is administered by the Canadian-American Center, Canada House, 160 College Avenue.

The program is interdisciplinary and designed to appeal to students in many fields who have an interest in Canada. The major prerequisite is CAN 1, Introduction to Canadian Studies. The course acquaints freshmen and sophomores with varied aspects of the Canadian experience: society, culture, history, native peoples, environment, education, technology, economy, and diplomacy. Participating faculty will include Canadian-American Center staff, visiting scholars from Canada, and faculty members from the several UMO colleges.

In order to complete the concentration students must take 18 hours of the courses listed below, including CAN 1 and nine additional hours of Canadian core courses. Hy 159.160 is particularly recommended. Other UMO courses may also be considered for application to the program, as well as courses taken at Canadian universities through the Canada Year program of the Canadian-American Center.

For the last eight years the Center has sent students in the Canada Year program from Orono to Canadian universities. In past years UMO students have studied at the University of Toronto, McGill University, l'université Laval, University of New Brunswick, Dalhousie University, Acadia University, University of Prince Edward Island, and Memorial University of Newfoundland, as well as a number of other institutions.

Although the program in the past was designed only for junior year students, the Canadian-American Center will now accept applications from sophomores and first year seniors as well. It should be noted that while participation in Canadian Studies is not a prerequisite to the Canada Year program, applications from students in Canadian Studies will be given preference by the selection committee.

Some of the best universities in North America will accept Maine students selected by the Canadian-American Center. There are many academic reasons for students to become involved. Study in Canada allows a student to strengthen his or her major by adding courses not offered at Orono or to study under different, interesting professors. Students also have an opportunity to live in an area with a different culture or language.

Students who are considering graduate study on Canada should contact the Center regarding the M.A. and Ph.D. programs at the University of Maine at Orono.

Courses with a 200 number are for selected undergraduates and graduate students:

Canadian Core Courses

CAN 1	Introduction to Canadian Studies
Ay 160	Peoples and Cultures of the Circumpolar Area
Eh 190	Canadian Literature
Fr 11	Readings in French-Canadian Literature
Fr 110	Survey of French Literature (French-Canadian)
Fr 296	Seminar in French Canadian Literature and Language
Geo 150	The Geography of Canada (or its equivalent)
Hy 157	France in America to 1763
Hy 159.	
160	History of Canada
Hy 221	Canada and the United States
Hy 222	Canadian Economic History
IDL 237	The Evolution and Development of Canadian Government and Politics
Sy 131	Canadian Society
Fl 97	French May Term in Quebec City

Related Courses

Ay 122	Folklore of Maine and the Maritime Provinces
Ay 151	North American Indian Ethnology
Ay 152	North American Indians in the Modern World
Ay 172	North American Prehistory
Ay 270	Seminar in Northeastern North American Prehistory
Ba 199	International Management
Ec 139	International Trade and Commercial Policy

Ec 145	Regional Economics
Ed 162	Workshop in Franco-American Studies (elementary)
Ed 172	Workshop in Franco-American Studies (secondary)
Eh 292	Literature of Maine and the Atlantic Provinces
Gy 243	Quaternary History of Northeastern North America
Jr 42	The Foreign Press

For further information on a Canadian Studies concentration, students should contact the Canadian-American Center, Canada House, 160 College Avenue.

Environmental Studies

The Environmental Studies Center has the responsibility for encouraging and promoting University interest and interdisciplinary cooperation in environmental research, teaching and public service. At present the Center offers no degree or minor programs, but does provide a referral and counseling service and a small environmental information center to students seeking more knowledge about the many complex problems associated with maintaining and improving the total environment. The Center also offers opportunities to faculty, staff and students interested in research and public service activities related to the environment.

Environmental concerns are considered in many courses in many departments of the University. However, some courses relate more directly to environmental understanding than do others. The following are representative of the University's present academic efforts in understanding and bettering the physical, biological and social environment. These courses carry little or no prerequisites, and offer greater familiarity with basic skills useful to decision making on environmental questions. Complete descriptions of these courses are found under the departmental offerings.

Most of the subject areas indicated below may be pursued to greater depth by taking additional courses as indicated in the offerings of the respective departments.

General

Ce 175	Contemporary Environmental Pollution
Env 100	Topics in Modern Environments
Fy 48	Natural Resources
Mhe 50	Man and His Environment

Physical

Gy 1 (1a)	Aspects of the Natural Environment
Ps 9	Climatology
Ps 10	Meteorology
S 2	Soil Science

Biological

Bt 130	Plant Ecology
Fy 19	Ecology

Social

ARE 42	World Population Dynamics
Ay 1	Introduction to Anthropology
Ec 21	Current Economic Problems
Ec 145	Regional Economics
Pl 1	Philosophy and Modern Life
Pol 1	Introduction to Government
Sy 135	Human Ecology

Additional information on environmental matters may be obtained by contacting:
 Environmental Studies Center
 11 Coburn Hall

College of Arts and Sciences

Gordon A. Haaland, Dean

The College of Arts and Sciences is fundamentally concerned with the identification, scope, and resolution of problems. This concern leads to a continual examination of the world of events and ideas. The responsibility of the College toward its students is to provide them with the skills, knowledge, and perspective necessary to develop into successful problem solvers in a complex and changing world. In addition, the programs of study should enable the student to develop a successful career, become a more effective citizen, and experience a productive life. To solve problems in the complicated context of the modern world requires a familiarity and sensitivity to the natural sciences, mathematics, social sciences, and humanities. Students receive a broad training in these areas as well as knowledge in depth in an area of the students choice. The breadth of the liberal education is provided by the general requirements, and the depth is provided by the major.

Major programs offered by the departments in the College of Arts and Sciences lead to the four-year degree of Bachelor of Arts in the following fields of academic study:

Anthropology	Medical Technology
Art	Modern Languages
Biology	Performing Arts (Broadcasting/Film Music, and Theatre)
Chemistry	Philosophy
Computer Science	Physics
Economics	Political Science
English	Psychology
French	Public Management
Geological Sciences	Romance Languages
German	Sociology
History	Spanish
International Affairs	Speech Communication
Journalism	Zoology
Latin	
Mathematics	

Double majors are also possible.

GENERAL INFORMATION

Admission — The specific requirements for admission are given in full in the Admission section. All deficiencies in entrance requirements must be made up before registering for the junior year. Students who transfer from other colleges with advanced standing must satisfy all admissions requirements within a year. *Note:* For admission to the College of Arts and Sciences *two years of the same* high school foreign language are required. Students who have *not* fulfilled this entrance requirement *must* take two semesters (6 hours) of a foreign language here for *no credit*.

Transfer Credit — No transfer credit will be allowed for courses taken at another institution in which grades below C have been received. Evaluation of courses taken at another accredited institution for which transfer credit is asked rests with the Director of Admissions and the Dean.

Graduation Requirements — The work of the College of Arts and Sciences leads to the degree of bachelor of arts (B.A.) and bachelor of science (B.S.). The latter degree is awarded in the School of Nursing. All students are required to complete a minimum of 120 degree hours.

In addition, a 2.0 average in courses offered in fulfillment of the major requirements as well as an overall average of 2.0 is required. All requirements must be satisfactorily completed before the faculty of the college will vote on granting the student a B.A. degree. In computing averages, each hour of A is multiplied by 4, B by 3, C by 2, D by 1, and E by 0.

Special area requirements are listed in the section, The First Two Years.

Students who transfer to this college from another college of the University will normally need two full years of work in the College of Arts and Sciences to satisfy all specific requirements for the bachelor of arts degree.

The First Two Years — During the first two years students in the College of Arts and Sciences take courses in selected fields. In order to assure a satisfactory level of attainment, some basic requirements will have to be fulfilled, including the successful completion of Eh 1, College Composition, which is designed to improve the student's writing skills.

Although the knowledge of an area in some depth (the major) is basic to a liberal education, students should not confine themselves to one particular area only. By the end of their college career, students should have been exposed not only to the required courses in the major but also to a broad range of subjects.

Since the exposure to a range of different disciplines requires more than a superficial knowledge, students will be required to take some work beyond the introductory level in areas other than the major. They will also have the opportunity to continue to explore disciplines through the survey courses.

THE ARTS AND SCIENCES REQUIREMENTS

I. College Composition

Beginning in the fall semester 1976, Arts and Sciences freshmen will be allowed to demonstrate composition proficiency, thereby earning three English 1 credits, in a variety of ways. Students with average SAT scores will enroll in the one-semester Eh 1 course and will receive credit when they have successfully fulfilled course objectives. Students with above-average scores will write a diagnostic examination, on the basis of which some will receive course credit and others will be advised to enroll in either a shortened, seven-week version of the course or the traditional, semester-long course. Students with low scores will enroll in one of the tutorial divisions of the course and may need two semesters to earn course credit.

During the junior year, all Arts and Sciences students will have to demonstrate writing proficiency in their major.

II. The Basic Requirements

1. Each student must take courses (or demonstrate competency by evaluation) totalling 27 *credit hours* in two of the General Areas identified.
2. These 27 *credit hours* may not be in courses which are in the *same* area as the student's *major area*.
3. A *minimum* of 11 *credits* of the 27 must be taken in each area, *excluding* courses in the major area.
4. A *minimum* of 12 *credits* of the 27 must be taken in courses *above* the survey introductory level.

The College is Divided into Three General Areas (Any courses in the following departments will fulfill the requirement).

Area I, Social Sciences: Anthropology (Ay), Economics (Ec), Journalism (Jr), Modern Society (My), Political Science (Pol), Psychology (Py), Speech Communication (SC), Sociology (SY)

Area II, Humanities: Art (At), English (Eh), Foreign Languages and Literature (Fl), History (Hy), Philosophy (Pl), Performing Arts: Music (Mc), Film (FLM), Theatre (Th), Radio and Television (RTV), Freshman and Sophomore Honors (Hr)

Area III, Natural Sciences and Mathematics: Chemistry (Ch), Computer Science (Cs), Geological Sciences (Gy), Mathematics (Ms), Physics (Ps), Zoology (Zo)

(The Science Requirement may be fulfilled by some courses in the College of Life Sciences and Agriculture. Information concerning these courses is available in the Student Information Center, Office of the Dean, Room 110, Stevens Hall).

III. Academic Advising

Advising remains a commitment of the College to its students and represents the most important vehicle for implementing both the spirit and the letter of the College requirements. Each student is assigned to a faculty member who will serve as academic adviser for the first two years of study.

The following areas fundamental to a liberal education may be recommended for individual programs or majors by a student's academic adviser. It is recommended that each student should be encouraged to take interdisciplinary courses and independent study wherever feasible. To reflect current problems and issues, it is recommended that students take a "course cluster" which meets general requirements and/or electives and which is organized in

related and sequential interdisciplinary concentrations. Some examples of Course Clusters are:

- Marine studies
- Law and justice
- Environmental and ecological issues
- Social behavior
- Problems of Maine
- Woman's studies
- Linguistics
- Religious studies
- Native American Studies

For further information on Course Clusters check with your adviser and/or the Student Information Center located in the Office of the Dean, Room 110, Stevens Hall.

Students register for five courses each semester; however, the actual number of credit hours carried in any one semester may range from 12-18. *Only* Dean's List students may register for six courses.

Normally not more than three hours may be taken in one subject in either semester of the freshman year, and not more than six hours may be taken in one subject in either semester of the sophomore year.

The Last Two Years — On the completion of 53 degree hours, students, in conference with their adviser and with the approval of the dean, select their major subject. The department in which the major subject chiefly falls becomes for administrative purposes the student's major department, and the head of that department is responsible for the student and must approve the student's registration.

The major curriculum is the nucleus of related courses selected by the students as representing their chief field of interest or major subject. Normally much of the work will fall in one department. The minimum number of credit hours acceptable for a major is set by the department. All students are required to take 120 hours of courses for graduation with at least *72 hours outside of the major*.

Selected students may take advanced courses in Military Science and Tactics during their junior and senior years, for which a *maximum of 10* credit hours may be received.

Foreign Study — The college encourages students in good academic standing to spend a year (preferably the junior year) in study at selected foreign universities. Depending on the foreign institution attended and the type of courses taken, academic credit for such study will be determined by the dean and the head of the student's major department upon completion of the program. While evidence of satisfactory performance in the form of grades, certificates, etc., is required to obtain degree credit, such grades will *not* be used in computing the student's accumulative average at the University of Maine. For details students may consult Professor Paulette French in the Department of Foreign Languages or Professor David Trafford in the Department of History.

Honors Program — These tutorial courses encourage exceptional ability by affording special opportunities for its exercise and to reward high achievement with appropriate recognition. The program stimulates originality, intellectual curiosity, and resourcefulness, and demands a large measure of self reliance. Students do their work under the supervision of a tutor, whom they meet in conference at regular intervals for informal discussion and advice. The formal recognition, the highest offered in the College of Arts and Sciences, is conferred following a successful completion of the honors program, in the form of graduation honors of three grades: honors, high honors, highest honors.

Pass-Fail Option — Students enrolled in the College of Arts and Sciences who have achieved second semester sophomore standing and who have an accumulative grade point average of 2.0 or better are eligible to take *one* course a semester on a Pass-Fail basis. However, courses which are required by the college and courses taken in one's major field or closely related fields may not be taken on a Pass-Fail basis.

A grade of D or better is graded as a Pass. Although Pass grades are not used in computing grade point averages, the credit thus earned is counted for degree credit.

The Pass-Fail option may be added, deleted, or changed from one course to another *only* during the *first week* of the Add-Drop period.

Professional Certificates for Teachers — Certification for secondary school teaching may be earned by students registered in the College of Arts and Sciences. Eighteen hours of basic work (Ed B2, Ed B3, Ed B4, one methods course and student teaching) meets the professional subject requirements for the General Secondary Provisional Certificate, which must be renewed after five years. Student teaching is required for full certification.

In addition to the 18 hours in professional courses, completion of a teaching major of 30 hours in one academic subject commonly taught in secondary schools is required. Candidates for a certificate are also expected to complete at least 18 hours in a second teaching field.

An alternate route to certification is possible by having 50 hours in a teaching area where at least three related academic subjects are represented.

Students planning on teacher certification should ascertain in advance whether their planned combination of major and minor areas is acceptable. It is recommended that students wishing to become certified register with the College of Education early in their academic career. Information may be obtained in the dean's office either in the College of Arts and Sciences or in the College of Education.

Medical Technology — This course is offered by the Zoology Department in the College of Arts and Sciences (Orono) in cooperation with the Eastern Maine Medical Center, Bangor, the Central Maine General Hospital, Lewiston, and the Maine Medical Center, Portland. Students electing this program (see Zoology) spend three years at the University of Maine, following which they undergo a period of 12 months in training at one of the above hospitals. Students receive the degree of bachelor of arts when they have satisfactorily completed the program. Those students who elect to attend the hospital in Lewiston or Portland for their 12 months in training will graduate at the regular time in June. Those electing the hospital in Bangor will graduate at the end of August. The work at the University also meets entrance requirements of other schools of medical technology which are not affiliated with the University of Maine. A special examination is given nationally, and a certificate in medical technology is issued when this examination is passed.

Public Management Curriculum — This program is designed to train men and women for governmental service in municipal and regional governments.

Bangor Theological Seminary — Regularly enrolled students in the College of Arts and Sciences may register for courses at the Bangor Theological Seminary, not to exceed six credit hours per semester, without payment of additional fees. The College of Arts and Sciences extends a like privilege to students regularly enrolled at the Bangor Theological Seminary. Such registrations must have the approval of the academic deans of both institutions and the instructors involved. Credit for courses so taken will be considered a part of the student's program at the institution where enrolled.

While enrolled at the Bangor Theological Seminary a student may, with the approval of the dean and the admissions office of the University, also register as a Special Student in the College of Arts and Sciences on the established fee basis for such courses. Work so taken, if it does not substitute for or duplicate courses taken in the Seminary program, may be counted as advanced standing credit toward the degree in the event a student later registers for a degree program at the University.

Summer Session — Before students of the College of Arts and Sciences pursue Summer Session courses in any institution other than the University, they must secure the approval of the dean and the chairman of the student's major department if they expect degree credit for such work. A marked bulletin of the institution should be left at the dean's office with a note requesting such credit for the courses selected.

Premedical and Predental Curricula — Medical and dental colleges in general desire students who are not only well prepared in the sciences and mathematics but who are also broadly educated. To the first point they require certain courses in biology, chemistry, mathematics and physics; to the second they recommend a liberal background in the humanities and the social sciences.

In order to meet the minimum requirements of most medical and dental schools students should plan, with the aid of their advisers, to include the following specific courses within the framework of their major program, all to be completed before the senior year.

Subject	Credit Hours
†Ch 11/12 General Chemistry or Ch 13/14 Chemical Principles	8
Ch 151/152 Organic Chemistry Lecture	6
Ch 161/162 Organic Chemistry Laboratory	4
Two semesters English Composition or Literature	6
Ps 1/2 or Ps 1a/2a General Physics	8
Bio 1 Basic Biology and Zo 4 Animal Biology	8

Most medical and dental schools will accept advanced placement in place of one or more of these subjects.

†Either Chemistry or Biology, or both, should be taken the freshman year.

Many medical schools require or recommend certain additional courses.

Among those most commonly required or recommended are the following:

Calculus
 Developmental Biology (Embryology)
 Foreign Language (Intermediate level)
 Physical Chemistry
 Principles of Genetics
 Quantitative Analysis

Although most premedical and pre dental students major in a science, they may major in any of the non-science departments according to their interests. The student would be advised, however, to take a program during the first two years that will allow the greatest possible freedom of choice in later selecting an undergraduate major. The freshman year specimen curricula given for majors in chemistry, physics, or zoology will leave many options open. Those who major in a non-science department and meet only the minimum science and mathematics requirements should achieve superior grades in order to demonstrate their proficiency in these critical subjects.

Students should be familiar with the admission policies of professional schools to which they plan to apply for admission. They must also meet the special requirements of the undergraduate college and department in which they wish to major.

Foreign Language — Several departments of the College of Arts and Sciences require successful completion of six credit hours of a foreign language. Listed below are the departments and their foreign language requirements or recommendations:

ANTHROPOLOGY: Intermediate language proficiency.

CHEMISTRY: One year of either French, German or Russian.

COMPUTER SCIENCE: The intermediate level of a foreign language is strongly recommended.

ENGLISH: Establish proficiency.

GEOLOGY: Students contemplating graduate work are *strongly encouraged* to take either French, German or Russian.

JOURNALISM: One year of a foreign language which can be either the continuation of the language taken in high school or a brand new language.

MATHEMATICS: The intermediate level of a foreign language is *strongly recommended*.

MUSIC: One year of a foreign language which can be either the continuation of the language taken in high school or a brand new language.

POLITICAL SCIENCE: Only in International Affairs.

PHYSICS: One year of a foreign language is recommended for the B.A. degree, two years for the M.A.

SOCIOLOGY: *Recommended* if going on to graduate school.

SPEECH COMMUNICATION: A six (6) hour sequence in foreign languages or linguistics.

ZOOLOGY: Proficiency at the intermediate level.

In addition, the humanities requirement of the College of Arts and Sciences may be partially fulfilled with a foreign language.

Students who have presented two years or more of a high school foreign language for admission can take: (a) one six-hour intermediate or advanced course in the language studied in high school, or (b) one six-hour elementary course in a new language. The second semester of an elementary course *must* be taken before credit can be given for the first semester.

Finding the appropriate level at which to take a language course is essential for success.

During the first week of the fall semester the Foreign Language Placement Examination will be given to all freshmen in the College of Arts and Sciences for purposes of both placement and credit. If these students are planning to satisfy a portion of the humanities requirement by continuing a foreign language taken in high school, they must take the Language Placement Examination.

If a student wishes to start a new language, it will not be necessary to take the Placement Examination. However, if students decide at a later date to continue in a language already taken, they must take the Placement Examination, at their own expense, through the Testing Center.

How to receive credit by examination?

(1) If the score on the Placement Examination is sufficiently high (see following table) the student will receive three (3) hours of degree credit equivalent to the first semester of the intermediate course.

(2) As an incentive to continue language study, a student is eligible to receive an additional three (3) credit hours equivalent to the second semester of the intermediate course by skipping the intermediate course and passing with a grade of C or better *two* semesters of language study beyond the intermediate level. For example, a student who scores 580 on the French

examination would received three (3) credits equivalent to French 3. The student would then have the choice of taking French 4, or skipping French 4 and taking French 7 and 8 or French 9 and 10, or any other advanced course. A student who completes, for example, French 7 and 8 with a C grade or better, will receive an additional three (3) credit hours equivalent to French 4.

STUDENTS TAKING FRENCH 3 OR 4 FOR CREDIT CANNOT RECEIVE CREDIT FOR THESE COURSES BY EXAMINATION.

(3) The student who scores extremely high (see table below) will receive six (6) hours of credit equivalent to the intermediate course. It is highly recommended that these students continue to take advanced courses in the language for which they have demonstrated considerable proficiency.

Language Exam.	3 Hrs. Credit	Score Range	6 Hrs. Credit
French	550-670		680 and above
German	560-670		680 and above
Russian	560-690		700 and above
Spanish	550-710		720 and above
Latin	560-670		680 and above

COURSES OF INSTRUCTION

Courses numbered 1 to 99 are undergraduate courses. They are open to graduate students, but credit earned in these courses may not be used to satisfy advanced degree requirements. Courses numbered 100 to 199 are upperclass undergraduate courses which may be used for graduate degree credit by graduate students if given prior approval by the graduate students' advisory committee. Courses numbered 200 to 299 are graduate courses which may be elected by undergraduate honor students, or those undergraduates whose advancement in the field will permit their taking a graduate level course among graduate students without disadvantage to themselves. Courses numbered 300 to 399 are graduate level courses which may be taken only by students admitted to the Graduate School.

One number is used for a course which is given both fall and spring.

When a dash is used between the two numbers (e.g., 1-2), both semesters must be taken to obtain credit; when a slant is used (e.g., 1/2), the first semester may be taken by itself, but the second cannot be taken unless the first is taken previously; when a period is used (e.g., 1.2), either semester may be taken for credit.

ANTHROPOLOGY (Ay)

Professors Emerick (Chairman), Ives**, Sanger*; Associate Professor J. Acheson**; Assistant Professors A. Acheson, Bonnichsen, Johnson

The Department of Anthropology presents a program of study designed to expand the student's awareness and understanding of the bio-cultural nature of man, the variousness of his behavior and the structure of his institutions. It is also designed to acquaint the student with the fundamental concepts, principles and research skills of cultural anthropology in all its many facets. The department is dedicated to a broadly based program in which the student is expected to sample courses representing the various sub-disciplines and closely allied courses from other academic fields. When a student declares anthropology as a major, he or she is assigned to an adviser within the department. If the student already has a particular interest in one of the sub-disciplines, such as archaeology, social anthropology or folklore — he will be assigned to an adviser most closely identified with that field. The undergraduate anthropology major, in consultation with his adviser, will select a series of courses which will enable him to meet college and departmental requirements, give him an opportunity to develop his interests, and provide him with a background suitable for his occupational goals. When the student signs up as an anthropology major, he will meet with his adviser to draw up a formal plan of studies for the following year. This plan must be approved by the faculty of the whole department. Each year the student is enrolled as an anthropology major, he must follow the same procedure. This policy is designed to provide the student with a program which both fits his needs and insures the kind of broad background in anthropology and ancillary courses commensurate with a liberal education.

*On leave of absence fall semester '76.

**On leave of absence spring semester '77.

Specific requirements for majors

1. In order to insure that the student receives broad training in anthropology and exposure to certain core concepts, the following courses are required. Ay 1.2 Introductory Anthropology, Ay 115 Basic Theory and Principles in Social and Cultural Anthropology, IDL 110 Introduction to The Study of Linguistics, Ay 21 Introduction to Folklore, Ay 170 Introduction To Archaeology, Statistics (the student with the approval of his adviser may select one of the following to meet this requirement — Ms 19, Py 141, Fy 4, ARE 12, S 271) Anthropology majors are also required to demonstrate intermediate level proficiency in a foreign language. Any language, whether taught at the University of Maine or not, will satisfy this requirement. Proficiency may be demonstrated either through formal course work or by passing an examination administered by the Foreign Language Department.

Note: Ay 1.2 should be taken in the freshman or sophomore year, Ay 115 and Ay 170 should be taken in the sophomore year or in the junior year at the latest. Senior Ay majors will not be permitted to take Ay 115. Other required courses should be taken as early in the major program as possible, since these are prerequisite to upper level courses. Courses in Statistics and Foreign Languages may be counted towards satisfying Arts and Sciences College requirements.

2. A minimum of 18 hours of additional courses are required for the major. The student will ordinarily take at least two courses from category I and at least one course from three of the following four additional categories. (i.e. categories II, III, IV, and V.)

Category I Advanced social and cultural courses focusing on aspects of culture. Ay 139, 163, 164, 165, 166, 180, 181 and 199

Category II Courses focusing on particular types of cultural adaptation. Ay 144, 150, 167 and 168

Category III Courses concerned with modern peoples and cultures of particular world areas. Ay 141, 142, 151, 153, 154 and 160

Category IV Advanced Folklore Courses. Ay 122, 123, 124 and 125.

Category V Advanced Archaeology Courses. Ay 171, 172, 175, 178, 179, 270, 276 and IDL 200.

The foregoing are to be considered the minimal requirements for a B.A. in Anthropology. Students who wish to explore requirements for graduate study or the professional career aspects of any of the areas for which this department is responsible should consult with their departmental advisers. Such students must expect to take certain additional or more specifically designated courses as approved in consultation with their advisers. For example, students wishing to prepare themselves for a career in prehistoric archaeology should select courses recommended by the Institute for Quaternary Studies; they include: Zo 4, Gy 1.2, Gy 242, Zo 156, IDL (Bt) 245, Ay 170, Ay 140. Ms 19 and Ms 169 are also recommended.

Recommended laboratory science courses for anthropology majors are Gy 1/2 or Bio 1, Zo 4.

A minimum of 36 hours carrying major credit must be taken. The college has established a 48-hour maximum for all departments.

Courses in Anthropology (Ay)

1.2. Introduction to Anthropology—The development of man as a biocultural phenomenon. Special emphasis on human paleontology and race formation, the nature of culture and such human institutions as social organizations, marriage, religion, economics, etc., among primitive people, with some application of derived principles to Western civilization. Required of majors. Cr 3.

21. Introduction to Folklore—A survey of the different genres of folklore, its forms, uses, functions and modes of transmission. Emphasis on belief, custom and legend. Cr 3.

***101. Physical Anthropology**—A lecture course which provides an introduction to methods and findings related to human evolution, primitive behavior, fossil man and racial differences. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

IDL 105. Women of Maine: An Autobiographical Approach—An interdisciplinary course taught by cooperating faculty from anthropology, history and speech. Through the use of taped interviews of selected Maine women and men, students will explore the traditional language of and about women. Prerequisite: sophomore and above. Cr 3.

IDL 110. Introduction to the Study of Linguistics—Comprehensive survey of language structure and function with attention to its socio-cultural, psychological, and historical aspects. Provides the student with basic conceptual and technical tools for understanding the

phenomenon of language. No previous training in languages or linguistics required. Course same as Eh, FI 110. Cr 3.

IDL 114. *Women in Society*—An interdisciplinary analysis of women's roles from an anthropological-sociological, psychological and historical perspective. Analysis of sex role formation and maintenance in Western industrial and more traditional societies. Changes in women's roles in the 19th and 20th centuries. Prerequisite: junior standing or permission. Py 1 recommended Cr 3.

115. *Basic Theory and Principles in Cultural and Social Anthropology*—Basic ideas and analytical concepts in cultural and social anthropology. Integration of these key ideas and understanding their historical antecedents. Practice in applying these principles to specific data through exercises and the reading of key monographs. Three lectures, one recitation each week. Prerequisites: Ay 1.2 or permission. Cr 4.

122. *Folklore of Maine and The Maritime Provinces — A survey of some of the genres of folklore as found in the major linguistic traditions (English, French, Indian) of the Northeast, with emphasis on Maine as the nexux of New England and Maritimes cultures. Special attention given to the occupational traditions of farming, fishing and lumbering. Prerequisite: Ay 21 or permission of instructor. Cr 3.

123. *Folksong—The place of music in human culture, its forms, functions, uses, methods of composition, manner of performance, esthetic theories, etc. Illustrative material chiefly drawn from Euro-and Afro-American folksongs (ballads, blues, worksongs, etc.). Emphasis on listening to and analysis of field recordings. No musical background or training required. Prerequisite: Ay 21 or permission. Cr 3.

124 *Narrative—Narrative and storytelling as universals in human culture. Definitions and distinctions (myths, legends, history, story, truth, fiction); uses and functions; performance and creativity. illustrative material drawn from a variety of cultures, including North American Indian groups. Prerequisite: Ay 21 or permission. Cr 3.

125 *Oral History and Folklore: Fieldwork*—Training and experience in collecting materials of folklore, folklife and oral history, especially through use of tape recorders. Advance preparations, interviewing techniques, processing of transcripts, and utilization of materials so gathered in writing and research. Tape and equipment provided. Prerequisite: permission of instructor. Cr 3.

139. *Psychological Anthropology*—An introduction to the concepts, theories and techniques involved in anthropological investigations of the relationships of culture, society, and the individual. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

141. *People and Cultures of the Pacific Islands*—Problem of migration to and peopling the Pacific world. Development of distinct cultural traditions traced in Australia, Melanesia, Micronesia, and Polynesia. Possibility of transpacific contact with pre-Columbian America. Special problems of these Oceanic people in the modern world. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

142. *Mediterranean Ethnology — Designed to consider various anthropological approaches to the Mediterranean culture area. Emphasis on persistence and change in social institutions characteristic of the rural or "traditional" segments of regional groupings around the Mediterranean. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

144. *Maritime Ethnology*—A general anthropological survey of Man's adaptation to maritime areas. Emphasis on theoretical issues raised by the comparative study of primitive, peasant and modern cultures that rely on the resources of the sea. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

150. *Hunters and Food Gatherers*—A survey of the vanishing people whose subsistence economy has remained at the hunting and gathering level. Focus on groups in all major geographical and cultural areas. Unique and common problems. Emphasis on ethnohistorical, environmental, and acculturation factors. Prerequisite: Ay 1.2, or permission of instructor. Cr 3.

151. *North American Indian Ethnology—A survey and analysis of native American peoples north of Mexico, covering both traditional culture patterns and modern developments and problems. Includes consideration of traditional culture areas, emphasizing adaptations and cultural dynamics, past and present. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

153. *People and Cultures of Mesoamerica—Contemporary peasant societies of Mexico and Guatemala. Short history of these communities since the Spanish Conquest. Comparison of Mestizo and Indian communities; relations between folk societies and urban areas. Current theory concerning Middle American societies. Prerequisite: Ay 1.2 or permission of the instructor Cr 3.

154. *Cultures and Societies of the Middle East—Cultures and societies of the Middle East. Emphasis on Arab world, Turkey, Iran and Afghanistan. Religious organization, kinship, political organization, and economics. Contemporary life and the current problems in the ethnography. Ay 1.2 or permission of instructor. Cr 3.

IDL 158. *Culture and Economic Development—The interface between cultural anthropology and economics, especially as these disciplines shed light on problems of economic change in the societies of the Third World. Prerequisite; Ec 10 and Ay 2, or permission. Cr 3.

160. *Peoples and Cultures of the Circumpolar Area*—The development of northern cultures in both the Old and the New Worlds traced from prehistoric times to the present. Problems of economics, social structure, and cultural organization. Prerequisite: Ay 1.2, or permission of instructor. Cr 3.

163. *Systems of Kinship and Descent*—A study of the basic concepts of kinship and descent in primitive and tribal societies; examination of specific systems; critical examination of the different approaches to the study of them. Emphasis on the relationship between kinship and other aspects of social structure. Prerequisite: Ay 115 or permission of instructor. Cr 3.

164. *Cultural Ecology*—Comparative study of human populations in ecosystems. The adaptive nature of culture. Implications of the ecological approach for anthropological theory, sociocultural evolution and change, and contemporary problems. Case studies from simple and complex societies. Prerequisite: Ay 115 or permission of instructor. Cr 3.

165. *Political Anthropology—Mechanisms and institutions for mediating disputes and allocating public power in selected non-Western societies. Prerequisite: Ay 1.2, or permission of the instructor. Cr 3.

166. *Economic Anthropology*—Comparative study of production, consumption and exchange in selected non-Western societies. Emphasis on factors influencing economic decisions in a variety of social and cultural settings. Prerequisite; Ay 115 or permission of instructor. Cr 3.

167. *Peasant Societies*—Peasants, neither primitive nor modern, are the majority of humanity. Study of the similarities and differences among and between peasant societies in various parts of the world. A critical examination of the body of anthropological theory concerning peasantry. Prerequisite: Ay 1.2 or permission of the instructor. Cr 3.

168. *Social Anthropology of Complex Societies*—An examination of selected problems and theoretical approaches in the study of complex societies and civilizations. Emphasis on contemporary non-industrialized societies. Prerequisite: Ay 1.2 or permission of instructor. Cr 3.

170. *Introduction to Archaeology*—Methods of archaeological research. Techniques of excavation and analysis; theoretical basis of methods and fundamental principles; application to specific case studies; interpretation of findings; the use of geological, biographical, geographical and other tools in archaeological research. A one-day compulsory field trip on a weekend to visit local archaeological sites. Prerequisite: Ay 1.2 or permission of the instructor. Cr 3.

171. *Old World Prehistory*—The prehistory of man in the eastern hemisphere from the beginnings of culture through the development of agriculture and urbanism. The development and elaboration of human society as inferred from material remains. Prerequisite: Ay 170, or permission of the instructor. Cr 3.

172. *North American Prehistory—The prehistory of man in North America from his arrival to European contact. A survey of major developments such as the spread of agriculture. Emphasis on late and post-glacial adaptations to environment. Prerequisite: Ay 170, or permission of the instructor. Cr 3.

175. *Paleoenvironmental Archaeology—An introduction is provided to historical and current theoretical literature which is used to explain cultural environmental relationships in prehistoric contexts. Emphasis on outlining the kinds of environmental data that survive in the historical record, e.g. geological, floral, faunal, soils, etc.; the sampling methods used to collect different kinds of data and types of inferences that can be made from surviving data regarding fossil cultural environmental relationships. Prerequisite: Ay 170. Cr 3.

177. Field Research in Archaeology—Introduction to archaeological field techniques by excavation of prehistoric sites in Maine. Intensive training in site survey excavation techniques, recording, analysis and preliminary interpretation of archaeological materials. Prerequisites: Ay 1 and 2 (or equivalent) and permission of instructor. Cr 6. (Summer only).

178. Analytical Techniques in Archaeology—Considers methodological areas such as sampling, typology and taxonomy. Techniques of analysis and human osteology. Normally taken as part of a series, Ay 178, 179. Prerequisite: Ay 170 and 171, or 172, or 175 or equivalent or permission. Rec. 3, Lab. 2, Cr 3.

179. Laboratory Techniques in Archaeology — Basic laboratory methods required in the preparations of archaeological site reports are emphasized. Techniques for the analysis of stone, bone and ceramic artifacts as well as drafting and photography procedures are covered. Normally taken as part of a series, Ay 178, 179. Prerequisite: Ay 170, 177 or equivalent or permission of instructor. Rec 3, Lab 2, Cr 3.

180. Sociolinguistics—Relationships between language and society, emphasizing societal rules or norms that explain or constrain language behavior and functions played by language in human societies. Speech styles and dialects, languages in contact, bilingualism, and the language problems of developing nations. Prerequisite: Ay 2 or Sy 3 and Ay 110, or permission of the instructor. Cr 3.

***181. Language and Culture**—Introduction to the writings of key figures in the field, exploring their broader implications in such areas as non-linguistic communication, semantics, linguistic relativity, structural anthropology, and general problems in "Cognitive Anthropology." Prerequisite: Ay 2 and IDL 110 or permission of instructor. Cr 3.

190. Topics in Anthropology —An advanced course dealing with specialized problems in anthropology; emphasis on analysis in "frontier" areas of anthropological research. Topics will vary and course may be repeated for credit. Prerequisite: permission of instructor. Cr 3.

191. Teaching Apprenticeship: Preparation—Highly qualified students may design a course under the supervision of one or more members of the department. Each student will propose a course to a sponsoring faculty member who will present it to the entire department for approval. If unanimously approved the student will proceed with designing the course, preparing outlines, bibliographies, lectures, etc. If the course meets the sponsor's approval he will recommend to the department that the student be allowed to teach it in a subsequent semester, normally the one immediately following. The student will be graded on his preparation of the course whether or not it is approved for teaching. Prerequisite: 12 hours of Ay and permission. Cr 1-3.

192. Teaching Apprenticeship: Practicum—A student will teach under the supervision of a sponsoring faculty member a course which he has designed and had approved for teaching in Ay 191. Students who wish to enroll in such a student-taught course will receive credit for it as a division of Ay 197 or 198. Prerequisite: Ay 191. Cr 1-3.

195. Intercultural Understanding—A human relations workshop. The point of view of anthropology, as well as some of the other social and behavioral sciences, is brought to bear upon cultural, ethnic, racial, religious and intergroup conflict in contemporary life. Participants and other resources people will also draw upon their own backgrounds and experiences in an attempt to achieve understanding of and adjustment to such human relations problems. No prerequisites. Summer only. Cr 3.

197. 198. Department Projects—A special project course in Anthropology initially proposed by the student to the instructor and agreed upon by both of them as to content, scheduling and number of credits. Credits arranged: maximum of 3 hours.

***199. Advanced Theory in Social and Cultural Anthropology** — A seminar on the selected theorists whose work has had an enduring significance in the development of anthropology. Emphasis on key theoretical approaches behind contemporary work in anthropology, the place of anthropology in intellectual history, and the relationship between anthropology and the other social sciences. Prerequisite: Ay 115 and permission of the instructor. Cr 3.

IDL 200. Seminar in Quaternary Studies — A multidisciplinary seminar concerned with selected areas of study — physical, biological and anthropological — related to the Quaternary Period. Subject areas will vary each semester. Can be taken more than once for credit. Prerequisite: permission of instructor. Cr 2.

270. *Seminar in Northeastern North American Prehistory*—the prehistory of northeastern North America viewed from an interdisciplinary perspective. Prerequisite: Ay 172 or equivalent and permission. Cr 3.

276. *Models in Archaeology* — A seminar designed to consider current theoretical approaches to archaeology. Prerequisite: Ay 171 or 172 or equivalent and permission of instructor. Cr 3.

ART (At)

Associate Professor Lewis (Chairman); Professor Hartgen; Associate Professors Decker, Ghiz; Assistant Professors Cushing, Eickhorst; Instructor Kelley

The B.A. Degree:

The Art Department, as part of the College of Arts and Sciences, offers the opportunity to study art within a strong liberal arts curriculum. There are 27 hours of Arts and Sciences requirements to be met from the areas of the *Social Sciences* and the *Natural Sciences and Mathematics*; 48 hours maximum in Art (36 studio, 12 art history); and 45 hours of electives. The major thrust of the art program is creative studio work in the areas of drawing, painting, graphics, and sculpture. Elective studio work is available in filmmaking, advertising art, and ceramics. The department also offers lecture and seminar courses dealing with concepts of art appreciation and with the history of art. Art history is seen as imperative to intelligent studio development, as is the socializing of the student to the attitudes, philosophies, language, etc., of the contemporary art world.

The Art Department utilizes a large collection of slides and reproductions in its teaching program. There is also a year-round program of exhibitions of original works of art sponsored by The University Art Collection.

Study in the Art Department can lead to (1) specialized work as an artist in one of the fine art areas, (2) graduate study in studio art or art history, (3) art related jobs in commercial art, layout, design, etc. (it should be noted, however, that we are not competitive with commercial art schools).

The B.S. Degree:

Majors in art education follow a curriculum developed in cooperation with the College of Education leading to certification as an art teaching specialist in the State of Maine, grades K-12. There are 33 hours of College of Education requirements, 23 hours of professional education courses, 34 hours in art studio (26 required, 8 studio electives), 14 hours of art history, and 16 hours of electives (liberal arts). This course of study may also lead to graduate work in the field of art education.

SPECIMEN CURRICULUM FOR B.A. DEGREE IN ART

27 hours A & S requirements; 48 hours Art (36 studio; 12 art history); 45 hours electives.

Freshman Year

At 1	Basic Drawing	2	At 2	Basic Drawing	2
At 7	Basic 2-D Design	2	At 8	3-D Design	2
	A & S Req., Area I or III	3-4		A & S Req., Area I or III	3-4
	A & S Req., Area I or III	3-4		A & S Req., Area I or III	3-4
	Elective	3-4		Elective	3-4
		13-16			13-16

Sophomore Year

At 15*	Basic Painting (Prereq.: At 1,2,7)	2	At 16*	Painting At 6	2
At 5	Art Apprec. & History	3	At 6	Art Apprec. & History	3
	A & S Req., Area I or III	3		A & S Req., Area I or III	3
	A & S Req., Area I or III	3		A & S Req., Area I or III	3
	Elective	4		Elective	4
		15			15

*Students wishing to stress sculpture, take At 10 instead of At 15.

*Students wishing to stress sculpture, take At 101 (sculpture division) instead of At 16.

				Junior Year	
At 11	Intermed. Drawing	2	At 12	Figure Drawing	2
At 9	Intro. to Graphics	2	At 10**	Intro. to Sculpture	2
At (21-27)	Art History	2	At 101	Studio problems in painting, graphics, or sculpture (can be repeated in same or different area.)	2
	(choose 1 course)				
	A & S Req., Area I or III	3	At 24	Contemporary Art Forms	2
	Electives**	6		Electives	6
				15	14
				**At 16 for sculpture students.	

Jr. year English Proficiency Exam must be satisfied this semester.

				Senior Year	
At	Electives (At 101, or At 34, 81, etc.)	4	At 101	Studio problems in painting, graphics, or sculpture	2
At 97	Problems in Art	4	At	(21-28) Art History	2
	Electives	9	At 98	Problems in Art	4
					9
				17	17

MINIMUM REQUIRED ART COURSES

At 1	Basic Drawing	At 12	Figure Drawing
At 2	Basic Drawing	At 15	Basic Painting
At 7	2-D Design	At 16	Basic Painting
At 8	3-D Design	At 5	Art Appreciation & History
At 9	Introduction to Graphics	At 6	Art Appreciation & History
At 10	Introduction to Sculpture	At 24	Contemporary Art Forms
At 11	Intermediate Drawing		

In addition, 4 hours of art history electives and 6 hours of advanced studio electives are *required*. This totals 38 hours in At courses. An additional 10 hours may then be elected from the courses listed below:

Studio Electives in Art: At 30, 33, 34, 35, 36, 41, 42, 81, 82, 97, 98, 101

Art History Electives: At 19, 20, 21, 22, 23, 25, 26, 27, 28, 31, 32, 51, 52

Art Education: At 65, 66 (4 credits each), At 151

Note: At 3, 4, 13, 14, 17, 18 and 69 are not open to art majors for degree credit.

Courses in Art (At)

Most studio courses require that the student purchase a basic supply of necessary tools and equipment.

1/2 Basic Drawing — The fundamentals of drawing: creative exercises exploring the principles of line, value, texture, space, and form. Various media, and their relationship to expression and composition are also stressed. Lab 4, Cr 2.

3.4 Principles of Art — The basic principles of art — its substance, nature and classification. An analysis of two dimensional, sculptural and architectural forms. Not an historical survey, although masterpieces are studied. Rec 3, Cr 3.

5.6. Art Appreciation and History—Techniques and trends in architecture, sculpture, and painting as related to the history of art from the earliest times to the present day. Lectures, text, slides, and prints. Rec 3, Cr 3.

7. Basic 2-D Design — Fundamentals of 2-D design through studio experience. Emphasis on pure design. Analysis of design elements, their relationships and organization and basic perceptual and aesthetic aspects of color. Lab 4, Cr 2.

8 Basic 3-D Design — Study of 3-D design principles. Learning fundamentals through studio exercises in form and space utilizing basic media and techniques. Lab 4, Cr 2.

9 Introduction to Graphic Arts—The fundamentals of etching, lithography, relief, and silk screen printing will be discussed, analyzed and investigated through studio experiences. Prerequisite: At 2, 7, Lab 4, Cr 2.

10 Introduction to Sculpture — Study of sculptural form and expression (control and understanding of spatial relationships). Deals with the manipulation of space and materials through bending, forging, carving, casting, and joining. In addition, the students are expected to familiarize themselves with the machines and tools of sculpture. Prerequisite: At 8, Lab 4, Cr 2.

11 Intermediate Drawing—Advanced study of the unique characteristics of various drawing media—charcoal, conte, pencil, ink, silverpoint. Stress will be on the ability to create imaginative and expressive, *complete* compositions. Prerequisite: At 2, Lab 4, Cr 2.

12 Figure Drawing—Creative drawing based on the human figure. Stress is on understanding the basics of form and structure in human anatomy and incorporating this understanding with technical and aesthetic mastery of drawing concepts. Prerequisite: At 11, Lab 4, Cr 2.

13.14. Fundamentals of Painting—Basic introductions to the painting art. Exercises in color, technique and composition. Studio and outdoor subjects. All media. Prerequisite: At 2 or permission. (Not open to art majors) Lab 4, Cr 2.

15/16. Basic Painting—Exploration of various painting concepts. Stress on composition, color, technical mastery of media, and creative imagination. Prerequisite: At 2,7, Lab 4, Cr. 2.

17/18. Exploring Contemporary Painting—An examination of trends and styles in 20th century painting with emphasis on the arts as a form of human communication. (Not open to art majors.) Rec 3, Cr 3.

19.20. Modern Architecture and Design—A broad survey of modern European and American architecture and design. Historical building systems and decorations are investigated in terms of their relationship to 20th century achievements in building and engineering. The aesthetic and social ideas of structures, spaces and design are stressed. Key monuments, schools, and major figures are focused on in slides, films and lectures. Special emphasis on urban planning and environmental design. Prerequisite: No freshmen. Rec 3, Cr 3.

21.22. American Art—A broad survey of the arts in America from the 17th century to the present. All aspects of the arts are looked into: painting, architecture, sculpture, graphics, domestic arts. First semester, 17th century to beginning of 20th century. Second semester, 20th century. Rec 2, Cr 2.

23.24. Contemporary Art Forms—An historical and stylistic survey of art forms from the 18th century to the present. First semester, neoclassicism through expressionism. Second semester, surrealism to the present. Prerequisite: At 5 and 6 are recommended, or permission. Rec 2, Cr 2.

25/26 Renaissance Art in Italy—The art and architecture of Italy from the 13th to 18th century. First semester covers through the 15th century. Second semester covers mannerism and the baroque. Prerequisite: At 5 and 6 recommended or permission. Rec 2, Cr 2.

27/28 The Northern Renaissance—The art of Flanders, France, Germany, Spain, and Holland, from the 14th to 18th century. The first semester will cover through the 15th century. Second semester covers through the 18th century. At 5 and 6 recommended or permission. Rec 2, Cr 2.

30. Art Materials and Techniques—Materials, methods, and techniques for the professional artist-craftsman. Examination, comparison, and testing of materials and processes of painting, graphics, sculpture, etc. Prerequisite: At 2 or permission. Primarily for art majors. Rec 2, Lab 1, Cr 3.

31.32. Masterpieces of Graphic Arts—A broad survey of masterpieces in drawing and print media covering all ages and countries. The work will be analyzed from technical, aesthetic, and stylistic points of view. Rec 2, Cr 2.

33/34. Intermediate Graphic Arts—First semester: relief printing and serigraphy. Second semester: intaglio and lithography. At 9. Lab 4, Cr 2.

35/36. Advanced Graphic Arts—Study of advanced studio techniques in the various print-making media. Stress is on mastery of technical aesthetic and expressive elements. Prerequisite: At 33/34. Lab 4, Cr 2.

41/42. Commercial Art and Publications Design—The design of booklets, catalogs, magazines, newspapers, posters, etc. Exercises in lettering and layout. Prerequisite: At 7 or permission. Lab 4, Cr 2. (Given on sufficient demand.)

51/52. Primitive Art—Fall semester: African and Oceanic art. Spring semester: North American Indian, Eskimo, Precolumbian Mexican and South American art. Permission. Rec 3, Cr 3.

65/66 Methods and Curricula in Art Education—Contemporary objectives in the teaching of art in the elementary and secondary schools. Selection and planning of materials, techniques, and curricula. Fall: research and materials exploration. Spring: teaching experience in a laboratory setting. Art education majors only. Ed B2, Ed B3 recommended or permission. Rec 2, Lab 2, Cr 4.

69. The Teaching of Art—Current methods and materials for the teaching of art in the elementary grades. Theory and actual experience with various two- and three-dimensional art projects. Junior or senior elementary education majors only; or permission. (Not open to art education majors.) Lec 1 and Lab 2, Cr 3.

81/82. Introduction to Filmmaking—Elementary techniques of filmmaking as an expressive art form. Study of the camera and its function, lighting, editing, composition, sound, and film continuity and structure. Stress on the aesthetics of film through study of some outstanding examples of past and present classics. (Student must pay cost of film and processing; other equipment supplied.) Permission. Lab 4, Cr 2.

97.98. Problems in Art—Advanced independent study or research projects in art and related areas. Prerequisite: Juniors and seniors only, and permission of the chairman. Cr Ar.

101. Advanced Studio Problems—Advanced, guided study, for student who has completed introductory and secondary level courses in a given medium. Special problems in technique and creative production. Understanding interdependency of thought and material in artistic expression. Prerequisite: Painting—At 16; Sculpture—At 10; Graphics—At 9, 33; Lab 4, Cr 2.

151. Art Education Workshop and Laboratory—Plan of study, projects and credit arranged. Limited to art education majors.

CHEMISTRY (Ch)

Professors Weigang, (Chairman), Dunlap, Goodfriend, Green, Wolfhagen; Associate Professors Bentley, Georgitis, Patterson, Rasaanah, Russ, Zollweg; Assistant Professors Frisch, Jensen; Lecturer Mrs. Wolfhagen; Instructor Wood

The student majoring in chemistry in the College of Arts and Sciences is able to complete all requirements for certification to the Committee on Professional Training of the American Chemical Society.

The specimen curriculum listed below is a suggested one, and indicates the minimum requirements. Some variation in the order in which courses are taken is possible. For example, the student might begin with Ms 4. Departmental advisers should be consulted for recommended changes.

Chemistry majors who intend to enter medical school should take Animal Biology during the freshman year; they may wish to postpone Physics until the second year. Also, these students may wish to omit some of the starred courses in order to have a wider choice of electives, in addition to the 18 hours of free electives already available within the normal load of five courses per semester.

Course descriptions are listed under the College of Engineering and Science.

A. REQUIRED COURSES

FALL SEMESTER		Freshman Year		SPRING SEMESTER	
		Hours			Hours
Ch 13	(or 11) Chemical Principles	4	Ch 14	(or 12) Chemical Principles	4
Ms 26	Anal. Geom. and Cal.	4	*Eh 1	Freshman Composition or Equiv.	3
Ps 1	General Physics	4	Ms 27	Anal. Geom. and Cal.	4
	Other	3	Ps 2	General Physics	4
		15			15
Sophomore Year					
Ch 140	Analytical Chemistry	4	Ch 152	Organic Chemistry	3
Ch 151	Organic Chemistry	3	Ch 162	Organic Chem. Lab.	2
Ch 161	Organic Chem. Lab.	2	*Ms 59	Anal. Geom. and Cal.	4
Ms 28	Anal. Geom. and Cal.	4	**Ge 7	Computer Programming	2
	Other	3		Other	3-6
		16			14-17
Junior Year					
Ch 169	Physical Chemistry	4	Ch 170	Physical Chemistry	4
Ch 171	Phys. Chem. Lab.	2	Ch 172	Phys. Chem. Lab.	2
*Ch 185	Chem. Literature	2	*Ch 190	Int. Organic Chem. Lab.	3
**Gm 1	Elementary German	3 or 4	**Gm 2	Elementary German	3 or 4
		14-18			15-16

Table 1

Grade	Mathematics	Science	History	Language Arts
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
12	1	1	1	1

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2. STATE BOARD OF EDUCATION

The State Board of Education is the governing body for the public schools of the State. It is composed of 12 members, 6 of whom are appointed by the Governor and 6 are appointed by the Legislature. The Board is responsible for the overall direction and control of the public schools, including the setting of standards and the approval of the State Board of Education's policies and procedures.

3. CONTACT INFORMATION

For more information, please contact the State Board of Education, 100 North Washington Street, Tallahassee, Florida 32304. Telephone: (904) 438-2200. Fax: (904) 438-2201.

ERRATUM

On page 61, the Economics Core requirements do **not** include MS 13/14 and MS 15/16. Only one semester of Mathematics and one semester of Statistics are required.

The State Board of Education has reviewed the document and has determined that the error on page 61 is a typographical error. The error has been corrected and the document is being reissued. The State Board of Education is committed to providing the highest quality standards for the public schools of the State.

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The first part of the book is devoted to a general history of the United States from its discovery to the present time. It is written in a simple and interesting style, and is well adapted for the use of schools and families.

The second part of the book is devoted to a detailed history of the United States from the discovery to the present time. It is written in a simple and interesting style, and is well adapted for the use of schools and families.

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THE HISTORY OF THE UNITED STATES

The fifth part of the book is devoted to a detailed history of the United States from the discovery to the present time. It is written in a simple and interesting style, and is well adapted for the use of schools and families.

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Year	Event	Location
1492	Discovery of America	New York
1607	First English Settlement	Jamestown, Virginia
1776	Declaration of Independence	Philadelphia, Pennsylvania
1789	Adoption of the Constitution	Philadelphia, Pennsylvania
1862	Emancipation Proclamation	Washington, D.C.
1865	End of the Civil War	Appomattox, Virginia
1898	Spanish-American War	San Juan, Puerto Rico
1901	Annexation of Hawaii	Honolulu, Hawaii
1914	World War I	Europe
1917	Entry into World War I	Europe
1929	Stock Market Crash	Wall Street, New York
1939	World War II	Europe
1945	End of World War II	Germany
1949	Communist Revolution in China	China
1950	Korean War	Korea
1954	Supreme Court Decision on Segregation	Supreme Court, Washington, D.C.
1963	Assassination of Martin Luther King Jr.	Memphis, Tennessee
1968	Assassination of Robert Kennedy	Los Angeles, California
1973	Watergate Scandal	Washington, D.C.
1979	Iranian Revolution	Iran
1981	Iranian Hostage Crisis	Tehran, Iran
1989	End of the Cold War	Europe
1991	Gulf War	Gulf of Persia
1993	World Trade Center Bombing	New York City
1994	Norfolk School Shooting	Norfolk, Virginia
1995	Oklahoma City Bombing	Oklahoma City, Oklahoma
1997	Clinton Impeachment	Washington, D.C.
1998	Clinton Impeachment Trial	U.S. House of Representatives
1999	Clinton Impeachment Acquittal	U.S. House of Representatives
2001	9/11 Attacks	New York City
2001	Start of the War on Terror	Afghanistan
2003	Invasion of Iraq	Iraq
2008	Financial Crisis	Global
2009	Obama Inauguration	Washington, D.C.
2010	Healthcare Reform	Washington, D.C.
2012	Supreme Court Decision on Gay Marriage	Supreme Court, Washington, D.C.
2013	Supreme Court Decision on Voting Rights	Supreme Court, Washington, D.C.
2016	Trump Election	Washington, D.C.
2017	Trump Inauguration	Washington, D.C.
2018	Midterm Elections	Washington, D.C.
2019	Trump Impeachment	Washington, D.C.
2020	COVID-19 Pandemic	Global
2020	Trump Impeachment Trial	U.S. House of Representatives
2021	Trump Impeachment Acquittal	U.S. House of Representatives
2021	January 6th Insurrection	Washington, D.C.
2021	Biden Inauguration	Washington, D.C.

The eighth part of the book is devoted to a detailed history of the United States from the discovery to the present time. It is written in a simple and interesting style, and is well adapted for the use of schools and families.

Senior Year

Ch 154	Adv. Inorganic Chem.	3	*Ch 164	Instrumental Anal.	4
**Gm 3	Intermed. German	3	**Gm 13	Scientific German	3
	Other	9-12		Other	8-11
		<hr/>			<hr/>
		15-18			15-18

*Required for certification by the American Chemical Society. Certain substitutions may be permitted.

**Not required for certification, but strongly recommended. Ms 181 may substitute for Ge 7.

B. OTHER REQUIREMENTS

One course selected from Eh 1, 7, 77, or 78

One course selected from Sh 3, 45, or 47

Ge 7, Ms 169, or equivalent is strongly suggested

Reading knowledge of German or other major foreign language designated by department.

German is recommended for ACS certification.

A total of 15 semester hours in social sciences and humanities as defined by the American Chemical Society, including one course in literature. This requirement usually will be satisfied by the requirements of the College of Arts and Sciences. Additionally, Eh 6 in the freshman year is recommended.

ECONOMICS (Ec)

Professors Clark, Coupe, Devino, Huq, Neville; Associate Professors Burke, Duchesneau, Lutz, Savage, Wihry (Chairman), Wilson; Assistant Professors Clifton, Moeller

The student majoring in economics in the College of Arts and Sciences must fulfill all the requirements of the College and also complete the following curriculum:

1. Core Requirements

Ec 10—Principles of Economics

Ec 132—Macroeconomics

Ec 173—Price Theory

One semester of Mathematics: Ms 5, or Ms 13, or Ms 26

One semester of Statistics: Ms 15, or Ms 18, or Ms 19, or Ms 131

Ms 13/14—Mathematics for Social Sciences

Ms 15/16—Introduction to Statistical Analysis

Note: (a) It is strongly recommended that majors take Ec 132 and Ec 173 immediately after Ec 10.

(b) Ba 9, Principles of Accounting is recommended for majors.

2. Completion of at least 21 additional hours in economics (Ec) courses. The maximum number of hours in economics courses counting for degree credit—45 hours.

Courses in Economics (Ec)

10. Principles of Economics—Analysis of the fundamental characteristics and institutions of modern economic society. Problems analyzed include: inflation, unemployment, poverty, resource allocation, international economic inter-relationships, economic growth and development. Cr 3.

21. Current Economic Problems—The application of economic reasoning to contemporary domestic and world problems. Problems and possible solutions are analyzed in terms of basic economic principles. Prerequisite: Ec 10. Cr 3.

132. Macroeconomics—An analysis of the basic forces that cause fluctuations in economic activity. The effects on employment, investment, and business firms are thoroughly treated. Stabilization proposals are examined and evaluated. Prerequisite: Ec 10. Cr 3.

133. Labor Economics—Labor in an industrial society; origins and structure of the labor movement; theories of the labor movement, wages and labor's income; the process of collective bargaining in industrial relations and the development of labor legislation and social security laws. Prerequisite: Ec 10. Cr 3.

135. History of Economic Thought—A survey of the development of basic economic principles and theories from preindustrial times to present. Major emphasis on the Classical School (Smith, Ricardo, and Malthus) and its critics, the development of the Austrian School, the synthesis of Neo-Classicism, and emergence of macroeconomics. Prerequisite: Ec 10. Cr 3.

137. Comparative Economic Systems—The structures and operating principles of the major contemporary economic systems are examined and compared. Prerequisite: Ec 10. Cr 3.

138. Economic Development—The theories and practices of interregional and international economic development. Special attention is given to development problems of emerging nations. Prerequisite: Ec 10. Cr 3.

139. International Trade and Commercial Policy—The principles and practices of international trade and finance are thoroughly treated. Special emphasis is given to current trends in the international economy and to United States commercial policy. Prerequisite: Ec 10. Cr 3.

144. Urban Economics—Patterns and processes of growth and structural change within urban areas. The nature and causes of the contemporary crises of urbanized society as reflected in poverty, slum housing, and crime, urban sprawl, traffic congestion, and the pollution of air, soil, and water. Application of tools of economic analysis to public issues such as urban renewal, environmental control, urban housing, urban transportation, financing of urban public services and so on. Prerequisite: Ec 10. Cr 3.

145. Regional Economics—Analysis of a region (country, state, county, city, etc.) as an economic unit. The economics of location, agglomeration, and interregional trade. Empirical tools such as cost—benefit analysis, base studies, input-output tables, and regional accounts. Prerequisite: Ec 10. Cr 3.

153. Money and Banking—The American banking and financial system; a study of the monetary theory and policy; and a detailed study of selected subjects in money and banking. Prerequisite: Ec 10. Cr 3.

IDL 158. Culture and Economic Development—The interface between cultural anthropology and economics, especially as these disciplines shed light on problems of economic change in the societies of the Third World. Prerequisite: Ec 10, Ay 2, or permission. Cr 3. (Same as course Ay 158.)

168. Social Control of Business—The nature and structure of American industry, with particular emphasis upon governmental regulation of competition and monopoly. Prerequisite: Ec 10. Cr 3.

171. Public Finance and Fiscal Policy—Public expenditure theory; principles of taxation; the federal budget and alternative budget policies; federal tax policy; fiscal policy for stabilization; federal debt. Prerequisite: Ec 10. Cr 3.

172. State and Local Government Finance—Development of the federal system; fiscal performance; intergovernmental fiscal relations; state and local revenue systems; budgetary practices; state and local debt. Prerequisite: Ec 10. Cr 3.

173. Price Theory—The theory of consumer behavior, markets, the firm, and distribution are treated. Prerequisite: Ec 10. Cr 3.

174. Economic Policy—Current economic problems in national and international levels. Prerequisite: senior standing Cr 3.

175. Industrial Organization—The relationship between market structure, conduct and performance. Also, the development of a general analytical framework to permit an assessment of performance in existing markets. Current public policy in this area is evaluated in the framework of the above analysis. Prerequisite: Ec 173 Cr 3.

180. Introduction to Mathematical Economics—Mathematics is used as a language in presenting concepts of economic theory. Prerequisite: Ec 132, 173; Ms 6 or 12. Cr 3.

185. Introductory Econometric Model Building—Statistical estimation of economic relationships has become widespread in the scholarly economic literature and as an input into the policy making process in industry and government. Without use of calculus or matrix algebra, econometric estimation techniques and problems will be investigated. Prerequisites: Ec 10, Ms 13, and Ms 19. Cr 3.

191. Field Experience in Economics—Supervised employment with relevance to the study of economics in either the public or private sector. Supervision by instructor of student's choosing. Requirements include initial proposal showing relevance of job to economics and final report or paper. Prerequisite: One-hundred level economics course in relevant area of work. Cr 3 per experience.

Graduate Courses (Ec)

210. Micro-economic Theory—Cr 3.

211. Macro-economic Theory—Cr 3.

215. Economics of Human Capital and Education—Cr 3.

220. *Monetary Theory and Policy*—Cr 3.

221. *Public Expenditure—Theory, Process, Outcomes*—Cr 3.

222. *International Economic Theory and Policy*—Cr 3.

223. *Seminar in Labor Economics*—Cr 3.

225. *Mathematical Economics*—Cr 3.

229. *Readings in Economics*—Cr 3.

230. *Econometrics*—Cr 3.

235. *Modern Economic Thought*—Cr 3.

237. *Studies in Socialist Economics*—Cr 3.

238. *Economic Development*—Cr 3.

265.266. *Research Seminar in Applied Economics* — The application of economic techniques to current economic issues. The seminar emphasizes applied research with appropriate analysis of issues along with regular oral and written reports of the results. Prerequisite: Ec 173, Ec 132 or permission. Cr 6.

275. *Industrial Organization*—Cr 3.

399. *Graduate Thesis*—Cr 6.

ENGLISH (Eh)

Associate Professor Wicks (Chairman), Professors Bennett, Holmes, Hunting, Manlove, Sprague, Terrell; Associate Professors Bauschatz, Brogunier, Cathcart, Hatlen, Wilson; Assistant Professors Andersen, Brucher, Chernecki, Dendurent, Dullea, Evans, M. Kenda, W. Kenda, MacKnight, Urbanski, Waite; Instructors Burnes, Duren, Ford, Kleine; Graduate Assistants Arnett, Allen, Baldus, Brooks, Clark, Dionne, Felter, Kearney, Kevit, Loehr, Marshall, McCarthy, Morong, Pineau, Roderique, Schwarz, Taylor, Ullman, Yee, and others

English majors must take a minimum of 36 hours of English. Of these 36 hours, 27 must be taken in the following areas:

Writing:

English 7 3 hours

English literature before 1660: 9 hours

Eh 21, 22, 153, 157, 158,

159, 160, 161, 164

English literature from 1660 to the present: 9 hours

Eh 23, 162, 166, 168, 169, 170,

181, 182, 187, 188

American literature:

Eh 43, 44, 79, 143, 144, 145

or other 19th century American literature courses

6 hours: 3 hours
prior to 1900; 3
hours at 100-level

NOTES:

1. Certain 200-level courses may be substituted for the 100-level courses listed.
2. All English majors must take at least 15 hours of literature courses on 100- or 200-level.
3. Courses in Comparative Literature at the 100-level may be counted toward the 36-hour minimum requirement in English, with an adviser's permission.
4. Among electives, English majors are strongly urged to choose as many as possible of the following courses: History of England (Hy 155.156); History of Philosophy (Pl 101, 103, 104, 164); Introduction to Linguistics (IDL 110); the History of the English Language (Eh 111); or The Western Tradition in Literature (Cp 11.12).

English majors will satisfy the Arts and Sciences Humanities requirement with courses other than Eh courses, such as Cp 11.12, Cl 1.2, Hy 1.2, and Pl 1, 101, 161, or 164.

The department offers the Master of Arts degree in English. Candidates for this degree may choose either of two programs: a Thesis Program of 30 hours—24 in course work and 6 of thesis; a Non-Thesis Program of not less than 30 hours of course work. (For further details see the Graduate School Catalog.)

There are somewhat different requirements for an English major who seeks a *Concentration in Creative Writing*. Specifically:

English literature before 1660: Eh 21, 22, 153, 157, 158, 159, 160, 161, 164	9 hours
English literature from 1660 to the present: Eh 23, 162, 166, 168, 169, 170, 181, 182, 187, 188	9 hours
American literature: Eh 43, 44, 79, 143, 144, 145 or other 19th century American literature courses	6 hours: 3 hours prior to 1900; 3 hours at 100- level
Twelve credit hours from among: Eh 8; Eh 77, Eh 78; Eh 101, Eh 102	

By the end of the first eight weeks of his final semester, the student is to submit as part of his work a book-length manuscript prepared as if for publication. Preparation and writing of this manuscript may be part or all of the student's work in Eh 101 or Eh 102.

Other courses strongly recommended: Pl 113; Eh 174, Eh 175; Cp 174, Cp 189, Cp 190; Hy 169, Hy 170; a course in the history of American art; and a course in intellectual history; and courses in foreign literature, either in the original or in translation.

Courses in Writing

1. College Composition—Intensive practice in expository writing, with reading of illustrative material. Required of most freshmen. As of fall, 1976, the course will be proficiency based; students will earn Eh 1 credit in one of four ways: 1) those with high SAT scores will be allowed to attempt credit by examination; 2) those failing the examination will enroll in either an advanced, seven-week version of the course or in the traditional, semester-long course; 3) students with average scores will continue to enroll in tutorial divisions and will often require two semesters to earn course credit; 4) those with low scores will enroll in tutorial divisions and will often require two semesters to earn course credit. Cr 3.

7. Advanced Composition—A course in expository writing for students wanting to learn through practice the methods of analytical, critical, and persuasive prose. Because the course is designed to meet the needs of students engaged in advanced study, it is most appropriate for juniors and seniors. Prerequisite: Eh 1. Cr 3.

8. Advanced Composition—Descriptive and Narrative Writing—Like Eh 7, this course is for those who wish to develop greater skill in writing, either for their own pleasure or for professional use. *Not* a remedial course. Prerequisite: Eh 1 or equivalent; and permission of course chairman. Cr 3.

17. Advanced Professional Exposition—Supervised practice in clear expository writing of formal reports, professional correspondence, and related materials. Preference given to juniors and seniors for whom the course is a requirement. Not recommended for Arts and Sciences students. Cr 3.

77.78. Creative Writing—An advanced course for students of demonstrated ability. Prerequisite: Eh 7 or 8 and permission of instructor. Cr 3.

101.102. Directed Writing—Supervised practice in the writing of the novel, drama, short story, poetry, essay, or literary criticism. Individual projects for students with demonstrated ability in writing. Credit earned dependent on amount of writing agreed upon in advance with the instructor. Prerequisite: by permission only. Cr 1, 2 or 3.

285. The Theory of Composition—Cr 3.

Undergraduate Courses in Literature

3. Literary Types—The purpose of this course is to introduce the student to the study of four literary genres: the essay, the short story, the play, and the poem. Students will study important themes and techniques, as these are revealed in a limited number of great books of the world. Prerequisite: no seniors; course *not to follow* Eh 4, 5, or 6. Cr 3.

4. Introduction to the Drama—Close reading and analysis of about a dozen to fifteen masterpieces of the drama. No A & S senior English majors. Cr 3.

5. Introduction to Poetry—A systematic progression through the various kinds of poetry (lyric, narrative, elegiac, occasional; the sonnet, the ode, the epic; etc.) and an examination of

the techniques (rhythm, pattern, sound, tone, imagery, metaphor, allusion, for example) used by poets of note. Prerequisite: open to freshmen; no A & S senior English majors. Cr 3.

6. Introduction to Fiction—A close reading of six or seven masterpieces of fiction (novel-length) and a selection from the great short stories of our time. Prerequisite: open to freshmen; no A & S senior English majors. Cr 3.

21.22.23. English Literature Survey—Prerequisite: 3 hours of literature or permission. Cr 3.

21. English Literature from Beowulf through Spenser—Cr 3.

22. English Literature from Donne through Johnson—Cr 3.

23. English Literature from Burns through the Pre-Raphaelites—Cr 3.

43.44. American Literature—Semester 1: American literature from Colonial times to the American Renaissance. Semester 2: American literature from the Rise of Realism to the present. Prerequisite: 3 hours of literature or permission. Eh majors primarily. Not recommended for seniors. Cr 3.

57. Shakespeare: Selected Plays — A study of ten plays, selected to represent the range of Shakespeare's achievement as a playwright. Recommended for non-majors, as well as for those majors who want to meet their Shakespeare requirement with a one-semester course. Not open to students who have taken Eh 157 or 158. Prerequisite: 3 hours of literature. Cr 3.

61. Writers of Maine — The Maine scene and Maine people as presented by Sarah Orne Jewett, E. A. Robinson, Edna St. Vincent Millay, Mary Ellen Chase, R. P. T. Coffin, Kenneth Roberts, E. B. White, and others. Prerequisite: 6 hours of literature. Cr 3.

79. American Short Fiction — A study of genre, form, and theme in representative works of American fiction from Irving to the present. Prerequisite: 6 hours of literature. Cr 3.

90. Topics in Literature—Prerequisite: 6 hours of literature or permission. Cr 3. Topics are announced from time to time. (Course is not offered every semester.)

99. Existentialism in Fiction—Religious and atheistic existentialism in British, American, and Continental fiction. Prerequisite: 6 hours of literature or permission. Cr 3.

Advanced Undergraduate Courses in Literature

(Graduate students are reminded that courses numbered 100 to 199 may be used for graduate credit only if prior approval has been given by the graduate student's advisory committee.)

143. The American Romantics — The great authors of the United States in the mid-19th century — their works, personalities, and social background. Prerequisite: 6 hours of literature or permission. Cr 3.

144.145. The American Novel — Semester 1: the novel from Brown to James; Semester 2: from Crane to the present. Prerequisite: 6 hours of literature or permission. Cr 3.

146. American Poetry — After looking briefly at some poetry of Taylor, Freneau, and Bryant, the course takes up the major 19th century poets — Emerson, Poe, Whitman, and Dickinson. Approximately the last 2/3's of the course then treats 20th century American poets: Robinson, Frost, Pound, Eliot, Williams, Stevens, H. Crane, R. Lowell, Roethke, and a few other contemporary poets. Prerequisite: 6 hours of literature or permission. Cr 3.

147. The American Drama — The development of drama in America from Colonial times to 1914. Prerequisite: 6 hours of literature or permission. Cr 3.

153. Chaucer—The major focus is on *The Canterbury Tales*, all of which are read in this course. Prerequisite: 6 hours of literature or permission. Cr 3.

157.158. Shakespeare—The comedies, history plays and tragedies. Attention is focused on the comedies and histories in the first semester, on the tragedies and romances in the second semester. Prerequisite: 6 hours of literature. Cr 3.

159. Elizabethan and Seventeenth-Century Lyric Poetry—Readings from Wyatt through Marvell, with special emphasis on Jonson and Donne. Prerequisite: 6 hours of literature or permission. Cr 3.

160. Seventeenth Century English Prose—Readings from Hooker through Bunyan, with special emphasis on the prose of Donne, Bacon, and Browne. Prerequisite: 6 hours of literature or permission. Cr 3.

161.162. British Drama—Semester 1: Shakespeare's contemporaries, with some attention to the drama before and after Shakespeare. Semester 2: a survey from the Restoration (1660) to 1900. Prerequisite: 6 hours of literature or permission. Cr 3.

164. *Milton*—The poetry and prose, with attention to the literary and historical background. Prerequisite: 6 hours of literature or permission. Cr 3.

166. *The Age of Swift and Pope*—The prose and poetry of the major writers: Dryden, Pope, and Swift; the minor writers: Butler, Pepys, Defoe, Addison, Steele, and Gray. Prerequisite: freshmen by permission; elective other levels. Cr 3.

168. *Johnson and His Circle*—A study of the major works of Samuel Johnson and his contemporaries: Boswell, Goldsmith, Gibbon, Reynolds, Burke, Garrick, Mrs. Thrale, and Fanny Burney. Some attention given to the beginnings of Romanticism. Prerequisite: 6 hours of literature or permission. Cr 3.

169.170. *The English Romantics*—The works of the major poets, with some attention to their critical writing and the historical and intellectual context provided by their contemporaries. Semester 1: Blake, Coleridge, and Wordsworth. Semester 2: Byron, Shelley, and Keats. Cr 3.

181.182. *The English Novel*—Semester 1: the principal novelists from the beginnings to Jane Austen. Semester 2: from Dickens to Hardy. Prerequisite: 6 hours of literature or permission. Cr 3.

187.188. *The Victorians*—Semester 1: focus on Tennyson (including the whole of *Idylls of the King*), Browning, and Dickens. Semester 2: Arnold, the Pre-Raphaelites, and Hardy. Cr 3.

190. *Topics in Literature*—In those semesters when this course is offered, the topic is posted in the department office. Cr 3.

199. *Distinguished Lecturer Seminar*—This course, like Eh 190, is intended to supplement, and allow occasional experiments within the existing curriculum. Normally offered in Summer Sessions only. Cr 3.

Graduate Courses in Literature (Eh)

200. *Beowulf* — Cr 3.

201. *Studies in Old English Literature* — Cr 3.

202.203. *Studies in Medieval Literature and Language* — Cr 3.

204. *Studies in Shakespeare and his Contemporaries* — Cr 3.

205. *Studies in Renaissance Literature* — Cr 3.

206. *Studies in Seventeenth Century Literature* — Cr 3.

207. *Studies in Eighteenth Century Literature* — Cr 3.

208. *Studies in Romantic Literature* — Cr 3.

209. *Studies in Victorian Literature* — Cr 3.

210. *Studies in Twentieth Century British Literature* — Cr 3.

211. *Studies in American Literature: Colonial through Romantic* — Cr 3.

212. *Studies in American Literature: Realistic and Naturalistic* — Cr 3.

213. *Studies in American Literature since World War I* — Cr 3.

215. *Literature of Maine and the Atlantic Provinces* — Cr 3.

290. *Studies in Literature* — Cr 3.

297. *Bibliography and Methods of Research* — Required of all graduate students in English. Cr 2.

301. *Seminar: Medieval Topics* — Cr 3.

305. *Seminar: Sixteenth Century Topics* — Cr 3.

306. *Seminar: Seventeenth Century Topics* — Cr 3.

307. *Seminar: Eighteenth Century Topics* — Cr 3.

308. *Seminar: Nineteenth Century Topics* — Cr 3.

311. *Seminar: Topics in American Literature before 1900* — Cr 3.

313. *Seminar: Twentieth Century Topics* — Cr 3.

350. *Independent Reading* — Prerequisite: 9 hours of graduate work and permission. Cr 1, 2.

390. *Topics in Literature and Linguistics* — Cr 3.

399. *Thesis* — Cr Ar.

G.S. 399. *Non-thesis* — Cr Ar.

Courses in Linguistics and in the History of the English Language

IDL 110. *Introduction to the Study of Linguistics*—A comprehensive survey of language structure and function, with attention to its socio-cultural, psychological, and historical aspects.

Provides student with basic conceptual and technical tools for understanding the phenomenon of language. No previous training in languages or linguistics required. (Course the same as Ay 110 and Fl 110). Cr 3.

111. *History of the English Language* — Main aspects of the development of Modern English from Old and Middle English; words and their backgrounds; changes in sound, form, and meaning. Prerequisite: IDL 110, 121, or equivalent. Cr 3.

296. *Special Problems in Linguistics*—Cr 3.

396. *Seminar in Linguistics and Semantics*—Cr 3.

Courses in the Teaching of English

104. *Teaching of English in the Secondary School*—A discussion of principles and practices in the teaching of literature, language, and composition, with exercises in theme correction. Prerequisite: 15 hours of literature. IDL 110 recommended. Cr 3.

105. *Workshop for Secondary School Teachers of English*—Lectures by staff and eminent specialists in reading, composition, language, and literature. Designed for experienced secondary school English teachers who want to enrich their backgrounds in their subject matter. Enrollment limited to 25 students. Course given in Summer Session only. Cr 3.

295. *The Theory of Composition*—Cr 3.

395. *Teaching College English*—Designed to aid graduate students in the learning and using of effective methods of teaching composition and literature. May be repeated for credit. Required of all graduate assistants in English. Cr 1.

Field Experience Course

95. *English Apprenticeship* — Students work with business, professions, or other organizations approved by the department as appropriate to an apprenticeship program. The work in the course varies with each student enrolled and with the needs of the cooperating employer, but normally involves either research, public relations, reporting, rewriting, interviewing, indexing, or other allied activity requiring skill in reading, writing, and in the perception encouraged and developed by a concentration in English. Prerequisite: 24 hours in English, including Eh 7 or Eh 17; and permission. May be repeated for credit up to 6 credit hours.

COMPARATIVE LITERATURE (Cp)

A Program in Comparative Literature, administered by a committee of representatives from the Department of English and the Department of Foreign Languages and Classics, offers the following courses.

11.12. *The Western Tradition in Literature*—Survey of the major writers in the Western literary tradition. The development of our cultural heritage and the evolution of major literary forms. Semester 1: Homer to the Renaissance. Semester 2: Neoclassicism to the 20th century. Recommended for English majors. Prerequisite: Eh 1 or equivalent. No freshmen. Cr 3.

173.174. *Literary Criticism*—Readings in literary theory and criticism. Semester 1: Plato to Coleridge. Semester 2: Coleridge to present trends in criticism. Prerequisite: 6 hours of literature or permission. Cr 3.

189.190. *Continental Fiction*—The major fiction of Western Europe (France, Germany, Spain, Italy), with emphasis on generic kinds of fiction, particularly the novel. Semester 1: Cervantes to Zola. Semester 2: 20th century fiction from Mann to Grass and Böll. Prerequisite: 9 hours of literature or permission. Cr 3.

191.192. *Modern Western Drama*—Major dramatists from the end of the 19th century to the present. Semester 1: plays by such dramatists as Ibsen, Strindberg, Shaw, Wilde, Chekhov, Hauptmann, Maeterlinck, Wedekind, Pirandello, Claudel, Synge, O'Casey, Giradoux, and O'Neill. Semester 2: plays by such dramatists as Brecht, Lorca, Anouilh, Sartre, Williams, Eliot, Ionesco, Miller, Becket, Dürrenmatt, Genet, Albee, and Pinter. Prerequisite: juniors or seniors, and 6 hours of drama or permission. Cr 3.

193.194. *Fiction of Eastern and Northern Europe*—Studies in Russian, Scandinavian and Central European fiction. Semester 1: beginnings to Tolstoy. Semester 2: Tolstoy to the present. Cr 3.

Graduate Courses (Cp)

250. *Seminar in Classical Literature*—Cr 3.

251. *Seminar in Medieval Literature*—Cr 3.

252. *Seminar in the Renaissance*—Cr 3.
 253. *Seminar in Neoclassicism*—Cr 3.
 254. *Seminar in European Romanticism*—Cr 3.
 255. *Seminar in European Realism and Naturalism*—Cr 3.
 256. *Seminar in Twentieth-Century European Literature*—Cr 3.
 299. *Special Topics*—Cr 3.
 300. *Introduction to Comparative Literature*—Cr 3.
 301. *Problems in Comparative Literature*—Cr 3.
 350. *Independent Reading*—Cr 3.
 399. *Graduate Thesis*—Cr Ar. (For further details and for information about the M.A. in Comparative Literature, see the Graduate School Catalog.)

FOREIGN LANGUAGES AND CLASSICS

Associate Professor French, (Chairwoman), Professors Rioux, Roggenbauer, Russell; Associate Professors Carroll, Delphendahl, Galbis, Gutman, Hayes, López-Muñoz, L. Luszczynska, R. Luszczynski, Singerman, Small, Tatem, Zollitsch; Assistant Professors Bauschatz, Betz, Brimmer, Cortinez, Gross, Hall, Herlan, Pyles, Troiano; Graduate Assistants Gallagher, Girodet, Jordan, Lavalard

Several departments of the College of Arts and Sciences require successful completion of six credit hours of a foreign language. Listed below are the departments and their foreign language requirements or recommendations:

ANTHROPOLOGY: Intermediate language proficiency.

CHEMISTRY: One year of either French, German or Russian.

COMPUTER SCIENCE: The intermediate level of a foreign language is strongly recommended.

ENGLISH: Establish proficiency.

GEOLOGY: Students contemplating graduate work are *strongly encouraged* to take either French, German or Russian.

JOURNALISM: One year of a foreign language which can be either the continuation of the language taken in high school or a brand new language.

MATHEMATICS: The intermediate level of a foreign language is *strongly recommended*.

MUSIC: One year of a foreign language which can be either the continuation of the language taken in high school or a brand new language.

PHYSICS: One year of a foreign language is recommended for the B.A. degree, two years for the M.A.

POLITICAL SCIENCE: Only in International Affairs.

SOCIOLOGY: *Recommended* if going on to graduate school.

SPEECH COMMUNICATION: A six (6) hour sequence in foreign languages or linguistics.

ZOOLOGY: Proficiency at the intermediate level.

In addition, the humanities requirement of the College of Arts and Sciences may be partially fulfilled with a foreign language.

Students who have presented two years or more of a high school foreign language for admission can take: (a) one six-hour intermediate or advanced course in the language studied in high school, or (b) one six-hour elementary course in a new language. The second semester of an elementary course must be taken before credit can be given for the first semester.

Finding the appropriate level at which to take a language course is essential for success.

During the first week of the fall semester the Foreign Language Placement Examination will be given free of charge to all freshmen in the College of Arts and Sciences for purposes of both placement and credit. If you are planning to satisfy a portion of the humanities requirement by continuing a foreign language taken in high school, you must take the Language Placement Examination.

If you wish to start a new language, you need not take the Placement Examination. However, if you decide at a later date to continue in a language you have already taken, you must take the Placement Examination, at your own expense, through the Testing Center.

How do you receive credit by examination?

(1) If your score on the Placement Examination is sufficiently high (see table following), you will receive three (3) hours of degree credit equivalent to the first semester of the intermediate course.

(2) As an incentive to continue your language study, you are eligible to receive an additional three (3) credit hours equivalent to the second semester of the intermediate course by skipping the intermediate course and passing with a grade of C or better two semesters of language study beyond the intermediate level. For example, if you were to score 580 on the French examination, you would receive three (3) credits equivalent to French 3. You then have the choice of taking French 4 or you may skip French 4 and take French 5 and 6 or French 9 and 10, or any other advanced course. If you complete, for example, French 5 and 6 with a C grade or better, then you will receive an additional three (3) credit hours equivalent to French 4.

IF YOU TAKE FRENCH 3 OR 4 FOR CREDIT THEN YOU CANNOT RECEIVE CREDIT FOR THESE COURSES BY EXAMINATION.

(3) If you score extremely high (see table below), you will receive six (6) hours of credit equivalent to the intermediate course. It is highly recommended that you continue to take advanced courses in the language for which you have demonstrated considerable proficiency.

Language Exam	Score Range	
	3 hours credit	6 hours credit
French	550-670	680 or above
German	560-670	680 or above
Russian	560-690	700 or above
Spanish	550-710	720 or above
Latin	560-670	680 or above

How is the examination score used for placement?

For students who score below the level for which credit is given, the examination results will be used to place you in the appropriate level course.

If you do poorly on the examination and wish to continue in the same language, you may take the elementary course for NO CREDIT, followed by the intermediate course for credit. Alternatively, you may elect to start a new language for credit.

Students may major in the following fields: French, German, Spanish, Romance Languages, Modern Languages, Latin, and International Affairs.

A. General requirements for majors in Foreign Languages:

1. Demonstration of listening comprehension, oral, reading and writing proficiency (students who have not received at least B in Fr 6, Fr 5, or Gm 6, or Sp 6, Sp 5 may be required to take a test in language skills), and

2. Demonstration of comprehensive coverage of literature and civilization through successful completion of appropriate course work, and

3. Beyond the intermediate level in French: 33 hours; in German and Spanish: 30 hours.

B. Special requirements for majors in:

French — Included in the 33 hours beyond the intermediate level are: 1) 12 hours of French language courses, 6 below 100, 6 at the level of 100 or above. 2) 18 hours of French Literature courses, 3) 3 hours of French or French-Canadian Civilization. Of the 18 hours of French Literature courses, 9 must be taken from the century courses, i.e., French 104 — French 108. Recommended for French majors: at least 18 hours of courses outside the department, including 6 hours in Linguistics or Language Theory; 6 hours in other Literatures or Literary Theory; 6 hours of Social Sciences. See department for specific course recommendations.

German — A survey course, Gm 103-104 (or equivalent), 18 hours of 100 level German courses, and Hy 5.6, History of Western Europe. Hy 125.126 History of Modern Germany is highly recommended.

Spanish — 18 hours of 100 level Spanish courses, Hy 5.6 History of Western Europe, or Hy 147.148 Hispanic America are highly recommended.

Romance Languages — A minimum of 30 hours in French and Spanish beyond the intermediate level, at least 24 of which must be in 100-series; a minimum of 12 hours *each* of the two languages must be taken. Hy 5.6 History of Western Europe is required.

Modern Languages — A minimum of 30 hours beyond the intermediate level, representing a combination of either a Romance language and German, a Romance language and Russian, or German and Russian. A minimum of 12 hours must be taken in each of the two languages and at least 18 hours must be in 100 series courses. Hy 5.6 History of Western Europe is required.

Latin — A minimum of 24 hours in the subject matter field beyond the intermediate level. Lt 47.48 should be taken in the junior year or earlier, if possible. In addition, majors are required to complete successfully 18 hours in two or more related disciplines in Arts and Sciences, including other languages and courses in translation offered by the department. Students intending to pursue Classic Studies should also take 6 hours in Greek and CI 1.2

Interdisciplinary studies—

a) Students may combine a specialization in French, German, Latin, Russian or Spanish with a program of Interdisciplinary Studies in the Humanities and Fine Arts. In such cases a program of 24 hours (instead of 30) in French, German, Latin, Russian or Spanish is combined with 24 hours of related work in Art, English, History, Music, Philosophy and Speech (for details see Special Programs).

b) B.A. in French (Franco-American option)

Students may combine a program of 24 hours in French with 18 hours of related work in three of the following departments:

Anthropology: Ay 139; 197.198; Fo 197.198

Economics: Ec 133; 135; 139; 145

History: Hy 10; 159-160; 176; 199

Psychology: Py 90; 130

Sociology: Sy 118; 138; 147; 191/192

In addition, students are required to take F.A. 140.

c) B.A. in Spanish (Latin-American option)

Students may combine a program of 24 hours in Spanish with 18 hours of related work in three of the following departments:

Ay 153 People and Cultures of Mesoamerica

Ay 167 Peasant Cultures

Hy 147.148 Hispanic America

Hy 149 Argentina, Brazil, Chile

Hy 150 Mexico

Hy 152 Problems of Latin America

Hy 251 Latin America and the United States

IDL 43 Tropical Agriculture

Pol 168 Government in Latin America

International Affairs (in Foreign Languages) — Students may combine a program of 24 hours in French, German, Russian, or Spanish with appropriate studies in other fields for a major in International Affairs. (See Index.)

Teacher preparation — In addition to meeting the major requirements in foreign languages, students desiring certification should complete the following:

1. 18 hours, including the introductory course, in a second subject commonly taught in high schools

2. An advanced grammar course (Fr 100, Gm 100, Sp 100, Ru 100)

3. A civilization course (Fr 157.158, Gm 102, Sp T57.58, Ru T57)

4. Fl 166 The Teaching of Foreign Languages

5. EdB 2, EdB 3, EdB 4, EdM 191 Student Teaching

and, in the case of French majors only: Fr 199 Applied French Linguistics, Fr 120 French Phonetics. Students should also register with the College of Education as teacher candidates before the end of the sophomore year.

Study Abroad — Students majoring in a foreign language are encouraged to spend a summer, a semester, or an academic year in a previously approved program of study at a foreign university as a part of their program. Consult the chairperson of the department regarding these possibilities. Up to 6 credits will be awarded for successful completion of an approved program.

The University is affiliated through the Universities of New Hampshire and Vermont with a Junior Year Abroad Program in Salzburg, Austria; through CIEE (Council on International Education Exchange) with a year or semester abroad study program at Rennes, France, and Seville, Spain.

A credit transfer arrangement exists with the Universities of Avignon, and Aix-en-Provence, France, and with the University of Kent in England. Arrangements for studies in Canada, e.g., at the Universities of New Brunswick, Nova Scotia, and Quebec, can be made through the NEAPQ Center.

Up to 32 credits may be earned through these programs, pending previous consent of the Dean, and the department chairperson involved.

Total immersion programs in French in Quebec, in German at Owl's Head, Maine and in Spanish at Sargentville, Maine are offered during the May Term (FL 97); 3 credits per program.

A summer study tour to the Soviet Union provides intensive, first-hand introduction to the Soviet Union, its people, institutions and culture. 3 credits will be awarded.

Graduate Study — The department also offers work leading to the master's degree in French and German. See the Graduate School catalog, as well as the Summer Session catalog, for special aspects involved when the degree is sought through attendance at summer session.

FOREIGN LANGUAGES (FI)

IDL 110. Introduction to the Study of Language—A comprehensive survey of language structure and function, its socio-cultural, psychological and historical aspects. Provides student with basic conceptual and technical tools for understanding the phenomenon of language. No previous training in languages or linguistics required. (This course is the same as Ay and Eh 110.) Cr 3.

FA 140. Franco-American Civilization—An interdisciplinary study of the French heritage in North America. Cr 3.

FL 97. May Term in French, German or Spanish — Cr 3.

FL 98/198. Summer Program Abroad — Cr 1-6.

FL. 150.151. Translation: Theory and Practice—Workshop in literary translating dealing with problems of translating various types of foreign prose into English. Helps student judge the reliability of existing translations as well as broaden his or her knowledge of the foreign language and culture. Prerequisite: reading fluency in a foreign language and permission of instructor. Cr 3.

FL. 159. Cultural Geography of Continental Europe—A survey of the geography of those countries in Europe where French, German, Spanish, Italian or Russian is spoken. Cr 3.

FL. 166. The Teaching of Foreign Languages—Principles and practice of teaching foreign languages. Analysis of current trends and methods. Application of language learning principles to classroom procedures. Theory and practice of language methodologies at different learning levels. Use of audio-visual devices, including closed-circuit television, and other modern media of instruction and demonstration. For students seeking certification in foreign language teaching. Cr 3.

FL. 175. Contributions of European Linguistic Groups to the American Cultural Heritage—The cultural contributions of European language groups to the development of America. The roots of many American traditions, tracing origins of characteristic (place) names and words to early immigrants; investigating ways in which groups or individuals dealt with the new environment in accordance with their own heritage. In order to study documentary evidence a reading knowledge of a foreign language is recommended. Cr 3.

FL 190. Topics in Foreign Languages. — The course may be repeated for credit if a different topic is treated. Cr 3.

FL 221. Seminar in Literary Research Methods—Literary topics transcending national boundaries will be chosen to provide training in the methods and techniques of literary research for students of French, German and Spanish literature. Cr 3.

Courses in Translation

CI 1.2. Greek and Latin Literature in English Translation—The first semester is devoted to Greek literature; the second semester to Latin literature. No knowledge of either language is necessary. Cr 3.

FLT 180. Introduction to Dante's Divine Comedy—Dante's *Divine Comedy*: Introduction to literary structure, theology, cosmology, and philosophy of the work. Cr 3.

Fr T 10. Contemporary French Novel—Existentialism to the New Novel; selected works in English translation of leading contemporary French novelists. (Does not count for the French major.) Cr 3.

Fr T 15. Twentieth-Century French Theatre—Selected works of leading French playwrights of the 20th century in English translation. (Does not count for the French major.) Cr 3.

Fr T 179. The Age of Enlightenment—Readings in English translation of the political, social, and philosophical writings of Montesquieu, Voltaire, Diderot, Rousseau, and other French writers of the 18th century. May be elected by juniors, seniors, and sophomores with

permission. (This course may not be used to meet the requirements of a major or the M.A. degree in French.) Cr 3.

Gm T 10. 20th Century German Literature in Translation—An introduction to the recent German writings in the drama, novel, and poetry, with special attention to such authors as Kafka, Mann, Brecht, and Grass. (Does not count for the German major.) Cr 3.

Gm T 15. Modern German Theatre in English Translation—A study of German drama from 19th Century Realism to the present. Reading and discussion of works by Hauptmann, Schnitzler, Kaiser, Brecht, Dürrenmatt, Frisch, Grass, Weiss and others. (Does not count for the German major.) Cr 3.

Gm T 58. German Civilization in Translation—Readings, discussions, lectures, and oral and written reports on Germany, its people, institutions and culture for the purpose of providing the background essential to an understanding of German literature, thought, and artistic expression. Cr 3.

Ru T 57. Soviet Civilization in Translation—Readings, discussions, lectures, and oral and written reports on the Soviet Union, its people, institutions and culture. No knowledge of the Russian language required. Cr 3.

Sp T 10. The Contemporary Spanish American Novel in Translation—The major works of Julio Cortázar, Carlos Fuentes, Mario Vargas Llosa, Gabriel García Márquez and José Lezama Lima, and other representatives of the contemporary experimental Spanish American novel. (Does not count for the Spanish major.) Cr 3.

Sp T 15. Cervantes in Translation—Don Quixote and other major works of Cervantes in English translation. Lectures on his life and times (Does not count for the Spanish major.) Cr 3.

Sp T 57. Spanish Civilization in Translation—Readings, discussions, lectures, and oral and written reports on Spain, its people, institutions, and culture for the purpose of providing the background essential to an understanding of Spanish literature, thought, and artistic impression. Cr 3.

Sp T 58. Hispanic Civilization (Latin America)—Readings, discussions, lectures, and oral and written reports on Latin America, its people, institutions and culture for the purpose of providing the background essential to an understanding of Spanish literature, thought, and artistic impression. Cr 3.

FRENCH (Fr)

1-2. Elementary French—For students with no previous study of French or less than two years in high school. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

1V-2V. Elementary French-Audiovisual—For students with no previous study of French or less than two years in high school. Emphasis on achieving skills in the spoken language. Cr 4.

1A-2A. Elementary French (Double Course)—For students with no previous study of French or less than two years in high school. A full year's work will be covered in one semester. Cr 6.

2 R. Conversational Review French—A quick review of some basic areas of French grammar, stressing conversation, but also including reading, and perhaps some writing as well. Designed for those students who have had elementary French in high school or college but who feel that they need some review before going on to take higher level French courses; or to prepare them for foreign travel. Cr 1-3.

3/4. Intermediate French—For students who have completed Fr 2 or the equivalent in high school as determined by a placement test. Two approaches are available: audio-lingual and emphasis on reading. (Audio-practice in the lab, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

3V/4V. Intermediate French-Audiovisual—Limited to students who have completed Fr 2 (Audiovisual) or who have achieved a better than average facility in speaking in two or three years of French in high school. Although facility in reading will be an important objective, emphasis will be upon the achievement of a high degree of proficiency in the spoken language. Cr 4.

3A-4A. Intermediate French (Double Course)—For students who have completed Fr 2 or Fr 1A-2A or the equivalent in high school as determined by a placement test. A full year's work will be covered in one semester. Cr 6.

5. French Conversation—A systematic attempt to increase active vocabulary and fluency in spoken French. Techniques used may include dialogues, skits, speeches, and discussions. Prerequisite: Fr 4 or the equivalent. Cr 3.

6. French Composition—Systematic training in correct usage and in vocabulary building, with written practice. Aims particularly to improve the student's command of writing, as Fr 5 concentrates on speaking and Fr 9.10 on reading. Prerequisite: Fr 4 or the equivalent. Cr 3.

7. French Diction—The pronunciation of French, with some attention also to the rudiments of structure of the language. Primarily a service course for the Departments of Performing Arts and Speech, e.g., vocalists, actors, radio and television announcers. No prerequisite. Cr 1.

8. French Play Production—Participation in the acting and production of plays in the foreign language. Prerequisite: permission of the instructor. This course may be repeated for credit another year. Cr 3.

9.10. Masterpieces of French and French-Canadian Literature—For students who wish further practice in reading literary selections before beginning literature courses in the 100 series. Discussion and analysis in French. Prerequisite: Fr 4 or the equivalent. Cr 3.

100. Advanced French Grammar—Designed to provide an adequate foundation in French grammar and syntax for prospective teachers. An intensive analysis and review of advanced grammar and syntax through exercises and translation. Cr 3.

101. Advanced Composition and Stylistics—A systematic study of the problems of style as seen through composition and translation. Prerequisite: Fr 100 or permission. Cr 3.

104. Medieval and Renaissance French Literature — Origin, formation and development of a national literature as seen through the prose, poetry and theater from the beginnings through the 16th century. Cr 3.

105. 17th Century French Literature — Literary trends in French classicism: Descartes, Pascal, Corneille, Racine, Molière, La Fontaine. Cr 3.

106. 18th Century French Literature — Cr 3.

107. 19th Century French Literature — Cr 3.

108. 20th Century French Literature — Cr 3.

109. French Critical Methodology — Examination of ideological cases of European critical methods from 19th Century to present. Special attention to concepts of history and structural method. Cr 3.

120. French Phonetics — A formal study of the French sound system with considerable practice in phonetic transcription. Practical and remedial work in pronunciation. Prerequisite: Fr 4 or the equivalent. Cr 3.

157.158. French Civilization — Readings, discussions, lectures, oral and written reports on varied aspects of France, its people, institutions, and culture to provide the background essential to an understanding of French literature, thought, and artistic expression. Prerequisite: Fr 4 or the equivalent. Cr 3.

160. Black African Literature in French — Lectures, readings and discussion of representative novelists, dramatists and poets of Black French Africa from 1930 to the present. Prerequisite: A reading knowledge of French and permission of the instructor. Cr 3.

190. Topics in French — Projected course topics in French and French-Canadian literature include: contemporary cinema, surrealism, contemporary French thought, modern French critical theory, semiotics, symbolism literature of commitment, images of women, women writers. The content of this course will change every semester according to the interests of both faculty and students. The course may be repeated for credit if a different topic is treated. Cr 3.

199. Applied French Linguistics — The French sound system, spoken grammar, basic concepts of descriptive and general linguistics. This course should be taken by students preparing for teacher certification. Cr 3.

Graduate Courses (Fr)

200. History of the French Language — Cr 3.

201. Old French Literature — Cr 3.

202. Seminar in French Renaissance Literature — Cr 3.

203. Seminar in French Classicism — Cr 3.

204. Seminar in Literature of the 18th Century — Cr 3.

205. *Social, Political, and Religious Backgrounds of the Early 19th Century in France* — Cr 3.
 206. *Seminar in Romanticism* — Cr 3.
 207. *Seminar in the Novel* — Cr 3.
 208. *Seminar in Poetry* — Cr 3.
 209. *Seminar in the Theater* — Cr 3.
 210. *French Linguistics* — Cr 3.
 211. *Seminar in French-Canadian Literature and Language* — Cr 3.
 291.292. *Individual Authors* — Cr 3.
 293.294. *Projects in French* — Cr 3.
 299. *Graduate Thesis* — Cr 6.

GERMAN (Gm)

1-2. Elementary German—For students with no previous study of German or less than two years in high school. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4)

1V/2V. Elementary German-(Audiovisual)—For students with no previous study of German or less than two years in high school. Emphasis on achieving skills in the spoken language. Cr 4.

1A-2A. Elementary German-(Double Course)—For students with no previous study of German or less than two years in high school. A full year's work will be covered in one semester. Cr 6.

3/4. Intermediate German—For students who have completed Gm 2 or the equivalent in high school as determined by a placement test. Two approaches are available: audio-lingual and emphasis on reading. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

3V/4V. Intermediate German-(Audiovisual)—For students who have completed Gm 2 (Audiovisual) or who have achieved a better than average facility in speaking in two or three years of German in high school. Although facility in reading will be an important objective, emphasis will be upon the achievement of a high degree of proficiency in the spoken language. Cr 3.

3A-4A. Intermediate German-(Double Course)—For students who have completed Gm 2 or Gm 1A-2A or the equivalent in high school as determined by a placement test. A full year's work will be covered in one semester. Cr 6.

5.6. Practical German—A course designed to improve students' comprehension, speaking, and writing. Recommended for German majors as preparation for their language proficiency test. Prerequisite: Gm 4 or equivalent. Cr 3.

7. Readings in Scientific German—For students who have completed Gm 3 or equivalent and wish to be able to read scientific articles in German. The second half of the semester will be devoted to individualized readings in the student's special field of interest. Prerequisite: Gm 3 or equivalent. Can be taken as an alternate to Gm 4; also serves as preparation for meeting graduate school language requirements. Cr 3.

8. German Play Production—Participation in the acting and production of plays in the German language. This course may be repeated for credit another year. Prerequisite: Permission of the instructor. Cr 3.

9. German Diction—The pronunciation of German, with some attention also the rudiments of structure of the language. Primarily a service course for the theatre and Departments of Music and Speech, e.g., vocalists, actors, radio and television announcers. No prerequisites. Cr 1.

100. Advanced German Grammar — Designed to provide a summary in German grammar and syntax for prospective teachers. Cr 3.

102. German Civilization — Readings, discussions, lectures, oral and written reports on Germany, its people, institutions, and culture to provide the background essential to an understanding of German literature, thought, and artistic expression. Prerequisite: Gm 4 or the equivalent. Cr 3.

103.104. Introduction to German Literature — A survey of the important periods in German literature with readings of representative works. Prerequisite: Gm 4 or the equivalent. Cr 3.

105. *Enlightenment and "Storm and Stress"* — A survey of representative works of this period with emphasis on Lessing, young Goethe, and Schiller. Cr 3.

106.107. *Goethe and Schiller*—Readings and discussion of works by Goethe and Schiller. Cr 3.

108. *The Romantic School*—A survey of representative authors from Novalis to Eichendorff. Cr 3.

109.110. *German Literature from 1832 to the Turn of the Century*—Important literary figures and movements with particular attention to the drama and Novelle. Cr 3.

111.112. *German Literature of the 20th Century* — Prose, poetry, and drama by representative writers. Cr 3.

190. *Topics in German* — Specific topic to be announced. It will vary from semester to semester depending on special interest of faculty member teaching it. The course may be repeated for credit if a different topic is treated. Cr 3.

Graduate Courses (Gr)

207. *Middle High German*—Cr 3.

208. *Medieval German Literature*—Cr 3.

290. *Seminar in Literary Genres*—Cr 3.

291.292. *Individual Authors*—Cr 3.

297.298. *Projects in German*—Cr Ar.

399. *Graduate Thesis*—Cr Ar.

GREEK (Gk)

1-2. *Elementary Greek*—Fundamentals of the Greek language. in the second semester, selections from Euripides' *Alcestis*. For students who have had little or no preparation in Greek. Cr 3.

3/4. *Readings in Greek Literature*—In the first semester, Plato's *Apology*, Euripides' *Alcestis*, and Sophocles' *Oedipus Rex*. In the second semester, selected books from Homer's *Iliad*. Cr 3.

ITALIAN

It. 15. Italian Diction—The pronunciation of Italian, with some attention to the rudiments of structure of the language. Designed primarily for singers but may also be elected by others. No prerequisite. Cr 1.

LATIN (Lt)

1-2. *Elementary Latin*—Fundamentals of the Latin language. Cr 3.

3.4. *Readings in Latin Literature*—Selections from Ovid's poetry. Emphasis on literary values. Second semester, selections from Martial's epigrams, selected letters of Pliny and Tacitus, Agricola. Cr 3.

47.48. *Latin Prose Composition and Stylistics*—Review of grammar and syntax, with particular attention to Cicero and Tacitus. The writing of prose, especially in the style of Cicero. This course, which is required for majors, should be taken in the junior year or earlier, if possible. Cr 3.

In Latin (Lt)

151. *Roman Comedy: Plautus and Terence*—One play of each dramatist will be read. The source of Roman comedy, its literary features, and influence upon later literature. Given every three years; offered in 1975-76. Cr 3.

152. *Roman Philosophical Thought*—Selections from Lucretius, *De Rerum Natura*, and Cicero's philosophical essays. The three major philosophical schools: Academic, Stoic, Epicurean, and their influence on Roman thought. Given every three years; offered in 1975-76. Cr 3.

153. *Poetry of the Republic and Early Empire*—The lyric poetry of Catullus, the *Odes* of Horace. The origin and development of satire, with selections from the satires of Horace and Juvenal. Given every three years; offered in 1974-75. Cr 3.

154. *Prose of the Republic of Early Empire*—Selections from Cicero's letters, Pliny's letters, and Tacitus' *Annals*. Given every three years; offered in 1974-75. Cr 3.

181. *Virgil: The Eclogues, Georgics, Aeneid*—The poet's background achievement, and influence upon later literature. Given every three years; offered in 1976-77. Cr 3.

182. *Survey of Latin Literature*—A rapid survey of the Archaic Age to Medieval Latin. Lectures, discussions, reports, and assigned readings. Given every three years; next offered in 1976-77. Cr 3.

197.198. *Projects in Latin*—Individual work on a project of the student's selection. Prerequisite: consent of the department head. Cr Ar (maximum: 3 hrs.).

RUSSIAN (Ru)

1-2. *Elementary Russian*—For students who have had no previous study of Russian or less than two years in high school. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

IV/2V. *Elementary Russian (Audiovisual)*—For students who have had no previous study of Russian, or less than two years in high school. Emphasis is upon achieving skills in the spoken language. Cr 4. (not offered in '76-'77)

1A/2A. *Elementary Russian (Double Course)*—For students with no previous study of Russian or less than two years in high school. A full year's work will be covered in one semester. Cr 6. (not offered '76-'77)

3/4. *Intermediate Russian*—For students who have completed Ru 2 or the equivalent in high school as determined by a placement test. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

3A/4A. *Intermediate Russian (Double Course)*—For students who have completed Ru 2 or Ru 1A/2A or the equivalent in high school as determined by a placement test. A full year's work will be covered in one semester. Cr 6. (not offered '76-'77)

7/8. *Practical Russian*—Systematic training in correct pronunciation, intonation and usage, and in vocabulary building, with written and oral practice. Prerequisite: Ru 4 (or the equivalent) and permission of the instructor. This course is conducted entirely in Russian. Cr 3. (next offered '77-'78)

109/110. *Introduction to Russian Literature*—A survey of major periods in Russian and Soviet literatures; readings of representative works, major works and general discussions in English, short representative works in Russian. Course satisfies the humanities requirement. Prerequisite: Russian 2 or permission of instructor. Cr 3. (next offered '77-'78)

153/154. *20th Century Russian Prose and Poetry*—Lectures, readings and discussions of representative writers of the 20th century from the symbolists to the present, including examples of the Soviet underground press (Samizdat). Ru 153, prose; Ru 154, poetry. Prerequisite: Ru 110 or permission. Cr 3 each. (next offered '78-'79)

167/168. *Advanced Russian Grammar, Composition and Stylistics*—Provides an adequate foundation in Russian grammar, composition and stylistics for majors and prospective teachers. An intensive analysis and review of advanced grammar and syntax (167); a systematic study of the problem of style as seen through composition and translation (168). Prerequisite: Ru 8 or permission. Cr 3.

SPANISH (Sp)

1-2. *Elementary Spanish*—For students with no previous study of Spanish or less than two years in high school. (Audio practice in the laboratory, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4.)

1A-2A. *Elementary Spanish (Double Course)*—For students with no previous study of Spanish or less than two years in high school. A full year's work will be covered in one semester. Cr 6.

3/4. *Intermediate Spanish*—For students who have completed Sp 2 or the equivalent in high school as determined by a placement test. Two approaches are available: audio-lingual and emphasis on reading. (Audio-practice in the lab, which carries one extra hour of credit, is highly recommended.) Cr 3. (or 4)

3A-4A. *Intermediate Spanish (Double Course)*—For students who have completed Sp 2 or Sp 1A-2A or the equivalent in high school as determined by a placement test. A full year's work will be covered in one semester. Cr 6.

5. Spanish Conversation—A systematic attempt to increase active vocabulary and fluency in spoken Spanish. Techniques used may include dialogues, skits, speeches, and discussions. Prerequisite: Sp 4 or the equivalent. Cr 3.

6. Spanish Composition—Systematic vocabulary building toward proficiency through written practice with attention to problems of writing style. Spanish 6 aims particularly to improve the student's command of writing, as Sp 5 concentrates on speaking, and Sp 7 on reading. Prerequisite: Sp 4 or the equivalent. Cr 3.

7 Readings in Spanish Literature—For students who wish further practice in reading before beginning literature courses in the 100 series. Discussion and analysis in Spanish. Prerequisite: Sp 4 or the equivalent. Cr 3.

8. Spanish Play Production—Participation in the acting and production of plays in Spanish. Course may be repeated for credit another year with permission of the instructor. Cr 3.

100. Advanced Spanish Grammar, Composition, and Stylistics — Designed to provide an adequate foundation in Spanish grammar, syntax, and composition for prospective teachers. Also applied stylistics for those with certain proficiency of expression interested in creative writing. Cr 3.

101.102. Introduction to Spanish and Hispanic Literature—A survey of the important periods and trends in Spanish literature, with readings of representative works. Prerequisite: Sp 4 or the equivalent. Cr 3.

103. Cervantes — A careful reading of the Spanish masterpiece. Don Quixote, with class discussions and lectures on its historical background and continuing influence. Students will report on Don Quixote and other major works. Cr 3.

104. Golden Age — Poetry, fiction and theater of 16th and 17th centuries. Representative poems by Garcilaso, Fray Luis, San Juan, Góngora, Quevedo and plays by Lope de Vega, Tirso de Molina, Ruiz de Alarcón and Calderón. Also "Lazarillo de Tormes" and "El Abencerraje" by anonymous authors. Cr 3.

105. Spanish Literature of the 19th Century — The Romantic Movements: between tradition and revolt. The novel from "costumbrismo" to "realismo". Spanish naturalism: a compromise. Cr 3.

106. Spanish Literature of the 20th Century—The Generation of 1898; the poetic generation of 1927; the pre-Civil War novel, drama and thought. Cr 3.

107. Contemporary Novel—"Tremendismo," "novela social," and latest experiments. The new poetry. Cr 3.

108.109. Modern Latin-American Novel and Short Story—From the late 19th century to World War II. Spring semester: the contemporary period, with attention to the literary renaissance throughout Latin America. Cr 3.

140. Latin-American Masterpieces—A selection of key essays, poems, short stories, and novels from the colonial period to the 20th century. Cr 3.

142. Contemporary Hispanic Theater — A study of some of the major playwrights from Spain and Latin America of the 20th century. Reading and analysis of plays; class discussion. Cr 3.

190. Topics in Spanish — Projected course topics in Hispanic literature include: Seminar on Borges, contemporary Hispanic thought, contemporary Hispanic cinema, Chicano Literature, women in Hispanic literature, contemporary Latin-American theater, poetry and short story in translation, contemporary peninsular literature in translation. The content of this course will change every semester according to the interests of both faculty and students. The course may be repeated for credit if a different topic is treated. Cr 3.

Graduate Courses (Sp)

207. *Old Spanish*—Cr 3.

208. *Spanish Literature of the Middle Ages*—Cr 3.

290. *Seminar in Literary Topics*—Cr 3.

291.292. *Individual Authors*—Cr 3.

297.298. *Projects in Spanish*—Cr Ar.

Portuguese (Pt)

1.2. Introduction to Portuguese — For students with no previous study of Portuguese (audio practice in the laboratory, which carries one extra hour of credit, is highly recommended). Cr 3 (or Cr 4.)

GEOLOGICAL SCIENCES

Professors Hall (Chairman), Borns, Denton, Osberg; Associate Professors Fink, Green, Howd, Hughes, Norton, Schnitker; Assistant Professors Chernosky, Karlén; Faculty Associates Anderson, Caswell, Doyle, Kellogg, D., Kellogg, T., Stanley, Stuckenrath, Thomas, Timson

The geological sciences are concerned with the physical and chemical characteristics of minerals and rocks, with their occurrence, arrangement, and surface expression, and with the history of the earth and its organic inhabitants. The curriculum provides for a basic understanding of the geological sciences and is sufficiently flexible to allow students with interests in geochemistry, geophysics, paleontology, and oceanography to pursue additional courses in appropriate ancillary sciences.

A geology major is prepared to enter directly into industry or survey work, or to enter graduate school in geology. In addition, if Zo 4, Ch 151/152, and Ch 161/162 are taken the requirements for medical or dental schools are met.

The requirements for the major include: Gy 1, 5, or 6; Gy 2; Gy 111; Gy 112; Gy 114; Gy 115; Gy 116; Gy 155; Gy 158; two elective geology courses; Ms 19; Ms 26; Ch 13/14; Ps 1/2 or 1a/2a; and Bio 1. For students contemplating graduate work in geology, Cs 81, mathematics through Ms 28, and attainment of proficiency in French, German, or Russian are recommended.

An approved summer field course is recommended between the junior and senior years. This course may be counted toward the major requirements.

The specimen curriculum is somewhat flexible and may be altered for individuals with previous geological training. Special interdisciplinary programs may be arranged after consultation with the departmental undergraduate advisor.

GEOLOGY SPECIMEN CURRICULUM

Freshman Year					
		Credit		Credit	
Gy 1	Aspects of the Natural Environment	4	Gy 2	Aspects of the Natural Environment	4
Ch 13	Chemical Principles	4	Ch 14	Chemical Principles	4
Eh 1	College Composition (if necessary) or Elective	3	Ms 19	Prin. of Statistical Inference	3
	Elective (or Ms 26)	4		Elective	4
		15			15
Sophomore Year					
Gy 111	Mineralogy	4	Gy 112	Intro. to Petrol.	4
Ps 1			Ps 2		
or 1a	General Physics	4	or 2a	General Physics	4
Ms 26	Analytical Geometry and Calculus	4	Bio 1	Basic Biology	3
	Elective	3		Elective	4
		15			15
Junior Year					
Gy 115	Prin. of Stratigraphy	3	Gy 114	Invertebrate Paleontology	3
Gy 116	Intro. to Structural Geology	4		Elective	4
	Elective	4		Elective	4
	Elective	4		Elective	4
		15			15
Senior Year					
Gy 155	Optical Mineralogy	4	Gy 158	Petrography	4
	Elective	4		Elective	4
	Elective	4		Elective	4
	Elective	3		Elective	3
		15			15

GEOLOGY (Gy)

1/2. Aspects of the Natural Environment—Fall semester: Earth materials and processes, including the structure of matter, formation of igneous rocks, radioactive age-dating, chemical and mechanical destruction of rocks, formation of sedimentary rocks, evolution of mountain belts, and formation of metamorphic rocks. Laboratory work includes a consideration of earth materials in preparation for two compulsory one-day weekend field trips. Lec 3, Rec, Lab and field trips, Cr 4.

Spring semester: The structure and composition of the interior of the earth, mountain building processes; the origin and use of paleomagnetic data in the continental drift question; the origin and evolution of the atmosphere, the hydrosphere, and life; mechanisms and patterns of biological evolution. Man's place in and utilization of his environment. Laboratory work includes preparation for two compulsory field trips in May. Prerequisite: Gy 1. Lec 3, Rec, Lab and field trip. Cr 4.

5. Geology for Foresters — A study of general physical geology to provide an understanding of the physical properties and behavior of surficial and crustal materials. Lec 2, Lab 2, Cr 3.

6. Geology for Engineers — A study of general physical geology to provide a basis for civil engineering applications. Emphasis is on topics related to the understanding of physical properties and behavior of surficial and crustal materials. Lec 3, Lab 2, Cr 4.

21.22. Geologic Problems—The study of and report upon some original investigation. Time to be arranged. Prerequisite: consent of instructor. Cr 1 or 2. May be taken more than once.

Courses Primarily for Undergraduate Students but Open to Graduate Students

111. Mineralogy—Introduction to crystallography and the crystal chemistry of minerals. Identification of the common minerals by their physical properties and x-ray powder analysis. Prerequisites: Ch 13/14 (may be taken concurrently). Rec 3, Lab 4, Cr 4.

112. Introduction to Petrology—Introduction to modes of occurrence, textures, and classification of rocks. Simple chemical concepts of rock systems. Prerequisite: Gy 1/2, Gy 111. Rec 2, Lab 3, Cr 4.

114. Invertebrate Paleontology—Description and classification of the important phyla of fossil invertebrates and a survey of their use in biostratigraphic, evolutionary, paleoecologic, and other studies. One or more day or weekend field trips. Prerequisite: Gy 2, Bio 1. Rec 2, Lab 4, Cr 3.

115. Principles of Stratigraphy—Basic concepts and techniques of stratigraphy and sedimentation. Several day and weekend field trips. Prerequisite: Gy 112 or permission. Rec 2, Lab 4, Cr 3.

116. Introduction to Structural Geology—Principles of structural geology, with emphasis on the integration of field observations and theory. Three weekend field trips. Prerequisites: Gy 112, Ps 1/2 or 1a/2a, Ms 26. Lec 2, Lab 3, Cr 4.

124. Geology of North America — The tectonic development of selected regions of North America which illustrate the theories and principles of continental evolution. Prerequisite: Gy 1, 5, or 6; Gy 2. Lec 3, Cr 3.

IDL 140. (Gy, Ay, Bt, S, Zo) Seminar in Quaternary Studies—A multidisciplinary seminar concerned with selected areas of study, physical, biological and anthropological, related to the Quaternary Period. Subject areas will vary each semester; may be taken more than once for credit. Prerequisite: consent of instructor. Rec 2, Cr 2.

155. Optical Mineralogy—Elementary theory of the polarizing microscope and the optical properties of crystalline substances. Use of the polarizing microscope in the determination of non-opaque minerals. Prerequisite: Gy 111, Ps 1/2 or 1a/2a. Lec 2, Lab 6, Cr 4.

158. Petrography—Application of elementary optical theory in the determination of non-opaque minerals in thin section. Theory and use of the universal stage and point counter. Textures and mineral relationships in igneous, metamorphic, and sedimentary rocks. Prerequisite: Gy 112, 155, Ms 19. Lec 1, Lab 4, Cr 4.

Courses Primarily for Graduate Students but Open to Undergraduate Students

IDL 200. (Gy, Ay, Bt) Seminar in Quaternary Studies — Rec 2, Cr 2.

210. Special Topic: _____ — Cr 1 or 2. Course may be repeated with different subtitles.

221. Low Temperature-Pressure Geochemistry—Lec 2, Cr 2.

222. Chemical Sedimentology—Lec 2, Cr 2.

224. *Aqueous Terrestrial Geochemistry*—Lec 2, Cr 2.
 232. *Sedimentology*—Lec 2, Lab 3, Cr 3.
 241. *Glacial Geology*—Lec 2, Lab 2, Cr 3.
 242. *Quaternary Environments and Climatic Change*—Lec 2, Lab 2, Cr 3.
 243. *Quaternary History of Northeastern North America* — Lec 2, Cr 3.
 244. *Glaciology*—Lec 2, Lab 2, Cr 3.
 IDL 245. (Bt, Gy) *Late Quaternary Paleoecology*—Lec 2, Lab and Rec 5, Cr 4.
 IDL 260. (Oc, Gy) *Marine Geology*—Lec 3, Cr 3.
 IDL 264. (Oc, Gy) *Structure and Tectonics of the Seafloor*—Lec 3, Cr 3.
 IDL 266. (Oc, Gy) *Micropaleontology*—Lec 3, Lab 2, Cr 4.
 IDL 267. (Oc, Gy) *Actuopaleontology*—Cr 2.
 IDL 268. (Oc, Gy) *Deep Sea Stratigraphy and Paleooceanography* — Lec 3, Cr 3.
 274. *Physical Geochemistry*—Lec 3, Cr 3.
 275. *Topics in Petrology*—Lec 3, Cr 3.
 277. *Experimental Petrology* — Lec 3, Cr 3.
 278. *Phase Relationships in Petrologic Systems* — Lec 4, Cr 4.
 279. *Seminar in Petrology*—Lec 1, Cr 2.

Courses for Graduate Students Only

- 301.302. *Directed Study in Geology*—Course may be repeated with different subtitles.
 399. *Graduate Thesis*

HISTORY

Professors, Doty†, Hakola, Jeffrey (Chairman), A. M. Johnson, Nolde, W. H. Pease*, Smith, Stewart‡, Trafford; Associate Professors Babcock, Banks, Baker‡, Battick, Blanke†, Nadelhaft‡, J. H. Pease*, Schonberger, Schriver; Assistant Professors Bregman, R. Fries, S. Fries, Lynn; Graduate Assistants

The history major must complete Hy 3.4, Hy 5.6, and at least 24 hours of advanced history courses approved by his adviser.

Superior majors are strongly advised to take at least one 200-level history course in each semester in their senior year. Other majors may be admitted to these 200-level courses by special permission.

The department offers the M.A. degree in history, with specialities in most areas of history. The Ph.D. degree is offered in United States history, Canadian-American history; and in the history of Great Britain and the Commonwealth. Within these fields, special emphasis may be placed on military and maritime history. Further details may be found in the Graduate School Catalog.

HISTORY (Hy)

1.2. *Classical and Medieval Civilization*—First semester: the social and cultural development of the ancient Greeks and Romans. Second semester: the social and cultural development of Western Europe in the Middle Ages. The great achievements in literature, philosophy, religion, and art. Cr 3.

3.4. *United States History*—The historical experience of the American people through the major ideas and forces that have shaped the Republic. First semester: the exploration of America through post-Civil War Reconstruction; Second semester: the urban-industrial age, liberal political reform, and American world leadership. (Both 3 and 4 given each semester) Cr 3.

5.6. *History of European Civilization*—Europe and its civilization from its medieval background to the present. The emphasis is upon those political, economic, social, and intellectual developments which help to explain our present-day civilization. (Both 5 and 6 given each semester) Cr 3.

* on leave of absence, 1976-77

† Fall 1976

‡ Spring 1977

7.8. Asian Civilization—The origins and evolution of Asian societies from prehistoric times to the present. Emphasis on China, Japan, India, and Southeast Asia. First semester: the cultural, philosophical, and political foundations of Asian societies to the 17th century. Second semester: Asia's encounters with the Western world and the most significant changes in Asia in the 19th and 20th centuries. Cr 3.

10. History of Maine—A survey of Maine's social, economic, and political life, from primitive times to the present. After a brief study of Indian life preceding white settlement, the periods of colonial, provincial, and state history are covered. (Given both semesters every year) Cr 3.

15.16. The World in the Twentieth Century — The response of world leaders and ordinary people to the events of the 20th Century: Two World Wars and a Cold War, competitive ideologies of fascism, communism and democracy, the rise of Asian, African and Mideast powers, the impact of the Great Depression and technology, and popular culture and morality from the age of the flapper to today. Lectures, films, and discussions. (Introduced in 1977-78). Cr 3.

50. History as People. The American Experience as Biography — An exploration of the American experience from the colonial period to the present. Major facets of American life explored through lectures on the lives and important actions of representative Americans. The premise of this course is that the past is sometimes best understood through its individual people. (Introduced in 1977-78). Cr 3.

101.102. Ancient History—The political, social, and economic history of civilization of the ancient Mediterranean world. Egypt, the Near East, and Greece will be studied in the first semester; Rome will be covered in the second semester. Cr 3.

103.104. The Middle Ages—Europe from late antiquity through the Renaissance. Emphasis on the Carolingian empire, the origin, development and structure of feudalism, the medieval church and state, medieval theology and philosophy, and the coming of the Renaissance. (Not offered 1976-77). Prerequisite: Hy 5 or permission. Cr 3.

107. The Renaissance and Reformation—The social, intellectual, cultural and economic achievements of the period 1300-1600. The Protestant and Catholic reforms and their effects will be evaluated. (Fall, 1976). Prerequisite: Hy 5.6 or permission. Cr 3.

108. Europe in the 17th Century—Histories of specific states will be subordinated to analyses of major trends in the period: state-building, economic changes, absolutism, science, war and diplomacy. (Spring, 1977). Prerequisite: Hy 5.6 or permission. Cr 3.

109. Europe in the 18th Century—The history of Europe from 1715 through the Congress of Vienna. Emphasis on the Enlightenment, the Enlightened Despots and the origins of the French Revolution. The impact and spread of French revolutionary thought throughout Europe, influence of the personality and military campaigns of Napoleon. (Fall, 1976). Prerequisite: Hy 5.6 or permission. Cr 3.

110. Europe in the 19th Century—The history of Europe from 1815 through the Franco-Prussian war. Liberalism and nationalism, reaction and revolution, socialism and imperialism. The impact of the unification of Germany and Italy on the politics and diplomacy of Europe. (Spring, 1977). Prerequisite: Hy 5.6 or permission. Cr 3.

111. The Foundations of Contemporary Europe—The emergence in Europe (1870-1919) of such basic contemporary institutions as mass democracy, modern political parties and social classes, 20th century cultural tenets, and modern business organization and protest movements under the impact of the Second Industrial Revolution, the new imperialism, the anti-positivist revolt, total war, and the Russian Revolution. (Spring '77, each Fall thereafter). Prerequisite: Hy 5.6 or permission. Cr 3.

112. Europe in the Contemporary World—Europe and her peoples since 1919, challenged by fascism, communism, economic crises, the loss of empire, intellectual uncertainty, world war, and Cold War division into East and West, together with post-1945 attempts to regain a position of world influence through economic and political integration, modernization, and renewed cultural vitality. (Spring, each year). Prerequisite: Hy 5.6 or permission. Cr 3.

113. Expansion of Europe—The origins, course, and effects of overseas expansion from 1400 to 1800. Lectures, readings and research papers on: motives and means for expansion; colonial empires; effects upon European and non-European States. Prerequisite: Hy 5.6 Cr 3.

119.120. History of Science—First semester: Greek science to the Scientific Revolution. Second semester: the modern period, with emphasis on American science in global perspective. Stress on science as a product of and shaping force for society. Cr 3.

121. Early Modern France—The political, social, and intellectual history of France from 1500-1815. The France of Francis I, the religious wars, the rise of bureaucratic absolutism, the ages of Louis XIV and Louis XV, the conquest and loss of Canada, the development of classicism, and the enlightenment in France, and the era of the French Revolution and Napoleon. Cr 3.

122. Modern France—French history since Napoleon. The internal political and social challenges from the Left and Right in the failure of three monarchies and three republics, the rise and decline of the French empire, economic growth and lag, Gaullism and the Fifth Republic, and French cultural leadership from Romanticism to Existentialism. (1977-78). Cr 3.

†**123.124. History of Russia**—Russian history from the earliest times to the present. First semester: the political, social, economic, and intellectual development of Tsarist Russia to the end of the Crimean War. Second semester: late 19th century Russia, the decay of the Tsardom, the Bolshevik Revolution, and the subsequent internal development and expansion of the Soviet Union. (1978-79). Prerequisite: Hy 5.6 or permission. To alternate with Hy 125.126. Cr 3.

‡**125.126. History of Modern Germany**—First semester: the decline of the Holy Roman Empire, the rise of Prussia, the Napoleonic impact, and the period to 1848. Second semester: the unification of Germany, the Weimar and National Socialist periods, and the Federal republic. Political, social, economic, and intellectual developments emphasized. (1977-78). Prerequisite: Hy 6 or permission. To alternate with Hy 123.124. Cr 3.

127. European Intellectual History—The interaction of ideas with society and politics in succeeding historical periods since the 17th century. Emphasis will be on the changing views toward man, society, science, literature, the arts, religion and government. Cr 3.

130. Industry and European Society—How European plain people and businessmen began an Industrial Revolution in the 18th century and continued it to the present. How changing industrialization modified people's lives and living standards, their perception of work and property, moral and religious values, family life and leisure, the status of women and children, violence and law and order, the nature and organization of capitalism, and protest movements. Cr 3.

133.134. European Diplomatic History—The diplomatic history of modern Europe, emphasizing the foreign policies of the major European powers and the changing concepts of international relations. The relationship of nationalism and military strength to foreign policy formulation. Prerequisite: Hy 6 or permission. Cr 3.

135.136. History of China—First semester: the history and culture of the Chinese people from earliest times to the 19th century. Second semester: the Western penetration of China, coming of the missionaries and the gunboats, impact of Western ideas, and the resulting nationalist and revolutionary movements. Prerequisite: Hy 7.8 or six hours of history, or permission. Cr 3.

137. History of Modern Japan—The history of Japan during the past century. Western penetration, the influence of Western ideas on traditional Japanese culture, the emergence of the modern Japanese industrial state, and the rise and defeat of the Japanese empire. Prerequisite: Hy 7.8 or six hours of history or permission. Cr 3.

141. History of Modern China—Twentieth century China and its 19th century antecedents. The social, economic, and political disintegration of the imperial regime, the subsequent revolutionary period, and the era of the People's Republic. Prerequisite: Hy 7.8 or Hy 135.136. Cr 3.

147.148. Hispanic America—The Spanish and Portuguese colonial empires in America. The national period of Hispanic America, and contemporary problems and tensions of the area. Prerequisite: Hy 3.4 or Hy 6 or permission. Cr 3.

149. Argentina, Brazil, and Chile—A history of the major countries of South America from their independence in 1823 to the present. Their social structures, political developments, and international relations. (Not offered 1976-1978). Prerequisite: Hy 148 or permission. Cr 3.

150. Mexico—Mexico from early times to the present. The social and political structure of Mexico, the Mexican wars of independence, and the revolutionary movement of the 20th century. (Not offered 1976-1978). Prerequisite: Hy 148 or permission Cr 3.

152. *Problems of Latin America*—An analysis and evaluation of contemporary Latin American problems. The internal tensions and international relations of the several countries. The rise, spread and development of Castroism in the area. (Not offered 1976-78). Prerequisite: 6 hours of history or permission Cr 3.

155.156. *History of England*—The political, socioeconomic and constitutional aspects of British history from Roman Britain to contemporary Britain. Emphasis on economic growth and the development of political democracy. Prerequisite: Hy 5.6 or 6 hours of Hy Cr 3.

157. *France in America to 1763* — French empire in St. Lawrence Valley, Acadia, Louisiana, and sugar islands from exploration to loss of her main American holdings. Emphasis on political and social institutions; French colonial life compared to France and to the English colonies. Prerequisite: Hy 3.4 or Hy 5.6 or permission. Cr 3.

159.160. *History of Canada*—Canada's history from New France to the present. Emphasis on Canada in the British Empire. Relations with the United States, and the historical development of contemporary issues. Prerequisite: Hy 3.4 or Hy 5.6 or permission. Cr 3.

161. *American Colonial History to 1740*—The founding and development of American colonies. The expropriation of Indian lands, enslavement of blacks, and internal conflicts will be emphasized. (every Fall Semester). Prerequisite: Hy 3 or permission. Cr 3.

162. *Revolution and Confederation, 1740-1789*—The origins and consequences of the American Revolution. Social tensions, manifested in rebellions, religious revivals, and violence. The internal stresses causing the Revolution. (Spring, 1978). Prerequisite: Hy 3 or permission. Cr 3.

163.164. *American Ideas*—Major ideas emerging from and shaping the American experience. Formal ideas as well as broad social movements considered, e.g. transcendentalism, pragmatism, and reform. Interrelationships between ideas and actions, conceptualizations and structures. (Annually). Prerequisite: Hy 3.4 or permission. Cr 3.

165. *Hamilton and Jefferson, 1789-1824*—Social, economic, political, and diplomatic problems of the new nation. Hamiltonianism and Jeffersonianism, foreign policy, constitutional development, political parties. Interrelationships between ideas and actions, conceptualizations and structures. (Fall, 1977). Prerequisite: Hy 3, or permission. Cr 3.

166. *The Age of Jackson, 1824-1850*—Social, economic, political development of the Middle Period. Party development, industrial growth, sectional interaction, slavery issue, reform. Interrelationships between ideas and actions, conceptualizations and structures. (Spring, 1978). Prerequisite: Hy 3 or permission. Cr 3.

167. *Civil War and Reconstruction, 1850-1877*—The social, economic, political, and constitutional changes surrounding sectional conflict and national reconstruction. Westward expansion, evolving labor systems, economic growth, new party formation, and efforts to reform and restructure society. (Fall, 1977). Prerequisite: Hy 4 or permission. Cr 3.

168. *The Gilded Age and Progressive Era, 1877-1914*—The transformation of the United States to a predominately industrial, urban society. Business growth, farm problems, immigration, labor organization, regular and reform politics, and imperialism. (Spring, 1978). Prerequisite: Hy 4 or permission. Cr 3.

169. *Early 20th Century America, 1914-1938*—The Wilson era of reform and intervention in World War I, the return to isolation, the age of business in prosperity and depression, and the New Deal period of Franklin D. Roosevelt. Changes in American politics, economics, organized labor, the judiciary, and the arts. (Offered each semester). Prerequisite: Hy 4 or permission. Cr 3.

170. *America Since 1938*—The rise of contemporary American society through the coming of World War II, the Cold War and the nuclear age. The emergence of the affluent society and the concurrent civil rights and student movements. The problems of increased federal centralization, the reform governments of the 1960's, the appearance of the military-industrial-aerospace complex, and resulting social reactions. (Offered each semester). Prerequisite: Hy 4 or permission. Cr 3.

171.172. *Economic History of the United States*—Trade and commerce, developments in industry, transportation, money, banking and labor, changing concepts of business enterprise, and the world economy. (1976-77). Prerequisite: Hy 3.4 or permission. Cr 3.

†**173.174. *American Diplomatic History***—American diplomatic history from the revolution to the present. The formation and application of America's major foreign policies. (1976-77). Prerequisite: Hy 3.4 or permission. Cr 3.

175.176. *American Social History* — Description and analysis of the American population as a social entity from 1607 to 1970. Special concentration on its family institutions, its ethnic and

racial components, the role which women played, the emergence of religious and social institutions, and the evolution of community in towns and cities. Prerequisite: Hy 3.4, or permission. (Introduced in 1977-78). Cr 3.

177. *History of the Treatment of the American Environment*—The attitudes, policies, and behavior of Americans and their government toward the environment. Current issues evolving out of past attitudes and policies. (Spring Semester). Prerequisite: Hy 3.4 or two one-semester courses in natural sciences or permission. Cr 3.

180. *Naval History*—Navies in the broadest strategic context from the Minoans to the present. Maritime empires, administration, technology and the evolution of tactics. Prerequisite: Hy 3.4 or permission. Cr 3.

181. *History of the West*—The westward movement with emphasis on the trans-Mississippi West. Topics covered include the fur trade, explorations, transportation, farming, ranching, mining, Indian relations and the twentieth-century West. (1977-78). Prerequisite: Hy 3.4 or permission. Cr 3.

183. *American Maritime History*—America's involvement with the sea from colonial times to the present. Economic importance of maritime trade, shipping and resources. Relationship of these factors to science, technology and society. Prerequisite: Hy 3.4 or permission. Cr 3.

185. *Man and the Sea*—An historical and contemporary overview of the reciprocal effects of mankind and the nautical environment of the world. Oceanic exploration, navigation, industries, international maritime law, the ocean environment, marine ethnology, merchant ships and shipping, and navies. No freshmen. Cr 3.

191.192. *War*—The nature and history of armed force from ancient Sumer and Egypt to the present. The first semester ends at 1865. Prerequisite: No freshmen or sophomores. Cr 3.

193.194. *The History of Technology*—The development of technology and its interrelationship with society. First semester: technology from the ancient world through the Industrial Revolution. Second semester: the evolution of modern technology; emphasis on American technology and experience. No freshmen. Cr 3.

197. *History Media Production* — The learning of media skills and history through supervised student creation of short multi-media or videotape productions. Prerequisite: 6 hours of history. Cr 3.

199. *Contemporary Problems in History*—An analysis in depth of a selected controversial and contemporary historical problem. The topic to be studied and the method of approaching it will be chosen jointly by interested students and the staff. Prerequisite: permission Cr 3.

Graduate Courses

Hy 201. *Advanced Reading Seminar* — American Diplomatic History.

Hy 202. *Advanced Reading Seminar* — American Intellectual History

Hy 203. *Advanced Reading Seminar* — American Regional History

Hy 204. *Advanced Reading Seminar* — American Economic History

Hy 205. *Advanced Reading Seminar* — American Political History

Hy 206. *Advanced Reading Seminar* — American Social History

217. *Early Modern England*—Problems, ideas, institutions and developments in the Tudor-Stuart period. Readings, reports and research papers in politics, religion, economic and social change, colonial and foreign policy. Stuart period, '74-'75; Tudor period, '75-'76. Cr 3.

219. *Modern England*—Evaluation of selected problems in English history since 1815. Among areas to be treated are the gradual democratization of the British government, continuing industrial revolution, and impact of two world wars on English social, cultural and political life. Lectures, readings, class reports, research papers. Cr 3.

221. *Canada and the United States, 1783 to the Present* — Wars, migrations, boundaries, resources, and trade, emphasizing the historical background to contemporary political, strategic, economic, and cultural issues in Canadian-American relations. Prerequisites: Hy 159.160, or Hy 173.174, or Pol 174, or permission. Cr 3.

222. *Canadian Economic History* — History and theory of Canadian staple development; political influences on land, resource, and industrialization policy; the social contexts shaping Canadian business elites and laboring classes; contemporary trends. Prerequisite: Hy 171.172, or Ec 138, or ARE 171, or permission. Cr 3.

224. *Readings Seminar in Modern European History*—Important recent books and articles in modern European history. Emphasis on publications and historical problems which have

applicability to the teaching of European and world history on the secondary school and college levels and on preparation for graduate study in European history. (1977-78). Prerequisite: senior history majors and graduate students. Cr 3.

IDL 237. (Hy, Pol 237) *The Evolution and Development of Canadian Government and Politics*—The theoretical structure and historical development of government and politics in Canada. Prerequisite: Pol. 135, Hy 160 or permission. Cr 3.

240. *Readings Seminar in Modern Asian History*—A research-oriented study of the major themes of Asian history in the 19th and 20th centuries. Impact of Western colonialism, rise of nationalism, emergence of contemporary leadership in East, Southeast, and South Asia. Prerequisite: graduate students. Senior history majors and others by permission. Cr 3.

251. *Latin America and the United States*—United States participation and intervention in Latin American affairs from the early 19th century to the present. Lectures, readings, class reports, and research papers. Cr 3.

260. *Agricultural History of the United States*—Rural life in America. Selected studies in agricultural techniques, inventions, capitalization, rise of agriculture as a business. The relationship of government and agriculture. Lectures, readings, class reports, and research papers. Cr 3.

261. *Urban History of the United States*—Rise of the city in America and the development of urban patterns of life. Population shift to the cities, development of slums and ghettos, growth of municipal institutions and services, and relationship of government with city dwellers. Lectures, readings, class reports, and research papers. Cr 3.

270. *Government-Business Relations in American History*—Federal regulation of business, antitrust policy, government as entrepreneur and as manager of the economy viewed in historical perspective. Lectures, readings, class reports, and research papers. Prerequisite: graduate students; senior history majors and others by permission. Cr 3.

283. *The Maritime Frontier: Policies and Affairs*—Relationship of maritime activity to national development from colonial times to the present. Technological developments, unionization, international competition, relationships to foreign policy, and special assistance to the maritime industries. Governmental policies affecting the use to which the ocean is put as an economic resource, ranging from the fisheries to oil drilling. Prerequisite: permission of instructor. Cr 3.

285. *New England History*—History of the region: *inter alia* the beginnings, the New England town, social mobility in 19th century New England. Discussions, lectures, readings, class reports, and papers. Cr 3.

297. *Field Work in Historical Institutions*—Field Work in local museums, state agencies and other historical agencies. Preparation and repair of exhibits, research and preparation of historic preservation documents, beginning archival and artifact handling. (Annually, on demand) Prerequisite: senior history majors and graduate students and permission. Cr 3 to 12.

299. *Special Topics in History*—A flexible course designed to explore and analyze new trends in research and interpretation in history. Prerequisite: graduate students; senior history majors and others by permission. Cr 3.

(300-level courses are listed in the Graduate School Bulletin)

HONORS PROGRAM (Hr)

Professors Thomson (Secretary), K. Allen, Borns, Bost, Camp, Cazden, Coupe, Frey, John Hakola, Hamilton, Hartgen, Holmes, Maccoby, Major, Nolde, Northam, Trafford, Tredwell; Associate Professors J. Acheson, Baker, J. Clark, R. Delphendahl, Ghiz, Schriver, Scontras, Tatem; Assistant Professors Betz, McCormick

Freshmen of marked academic ability enrolled in all colleges are invited to apply to the secretary for admission to the sequence of honors courses described below. The work of the freshman and sophomore years, under the direction of staff drawn from all colleges of the University, provides the stimulus and the guidance which should enable a superior student to begin building for himself a perspective view of the liberal arts and sciences and to lay a foundation for the more specialized work which is to come. The Honors Program reaches its climax in a thesis which is written during the senior year and treats some limited problem falling in the student's major field. In exceptional cases, students may be admitted at any stage of the Honors Program up to the opening of the junior year. Of the courses listed below, Hr 41, 45, 47, and 48, are taken in common with students from other colleges within the University.

41. Honors Freshman Seminar — Readings and discussions of basic concepts in the arts and sciences. Cr 3.

45. Honors Colloquium—Readings and discussion on the basic concepts of Western civilization. Normally taken in the freshman year. Cr 3.

46. Honors Summer Readings: Basic—Optional for those who have taken course 45. An individually arranged program of readings is independently pursued in the summer. Cr 1.

47.48. Honors Group Tutorial—Oral and written reports under tutorial direction, upon a planned sequence of books representative of the various fields of liberal education. Cr 3.

49. Honors Summer Readings: Intermediate—Guided summer readings and reports, individually adapted to the student's program. Primarily for students who have had only one semester from Hr 47.48. Cr 1.

60. Honors Independent Study — A tutorially conducted study of a topic outside the student's major field. Cr 1-3.

61. Honors Research Assistantship — The student will work as assistant to a faculty member in the latter's research. Cr 1-3.

62. Honors Independent Research — A research project done under the supervision of a faculty member. The project may not be substituted for the senior research project; it may be related to it, or it may be in another field of study. Cr 1-3.

63. Honors Specialized Seminars — Group study of a problem lying outside of normal course offerings. May be student or faculty generated, with the approval of the Honors Council. Not offered every semester. Cr 1-3.

150. Honors Seminar—Discussion groups in such fields as the arts, philosophy and history of science, aspects of the study of society. Content varies from year to year. Normally taken in the junior year. Cr 3.

151.152. Honors: Specialized Studies—A tutorially conducted study of the student's major field, issuing in the choice of an approved thesis topic. Cr 3.

153.154. Honors Thesis—The planning and completion of an honors thesis or research project. Cr 3.

170. Honors Distinguished Lecture Course — A series of lectures by a distinguished lecturer or lecturers, involving collateral reading and group discussion. Not offered every semester. Cr 1-3.

INTERNATIONAL AFFAIRS (Ia)

A major in International Affairs may concentrate in economics, foreign languages, history, or political science.

During the first two years the student of International Affairs should fulfill the basic requirements of the College of Arts and Sciences. Among such requirements students should take Ec 10, Principles of Economics, Hy 3.4, United States History (and/or Hy 5.6, European History), introductory or intermediate courses in a modern foreign language, and Pol 1, American Government. Students should also consult with their department adviser in International Affairs regarding courses that might be advisable to take. To enter the junior year of the program students must have a minimum point average of 2.0 or permission from the Committee on International Affairs.

The essential requirements of the respective programs in International affairs are:

International Affairs in Economics

1. At least twenty-four (24) hours in economics in addition to Ec 10. Among such courses may be:

- Ec 137. Comparative Economic Systems
- Ec 138. Economic Development
- Ec 139. International Trade and Commercial Policy
- Ec 222. International Economic Theory and Policy
- IDL 158. Culture and Economic Development

2. At least nine (9) hours each in history and political science from among the following courses or from among others with an international focus:

- a. History
 - Hy 8. Asian Civilization
 - Hy 133.134. European Diplomatic History
 - Hy 152. Problems of Latin America

Hy 173.174. American Diplomatic History
 Hy 192. War
 Hy 221. Canadian External Relations

b. Political Science

Pol 21.22. Current World Problems
 Pol 135. Democratic Governments of Europe
 Pol 136. Communist Governments
 Pol 173. International Relations
 Pol 174. United States Foreign Policy
 Pol 187. International Law
 Pol. 188. International Organization

3. At least one year of a modern foreign language beyond the intermediate course.
4. Additional electives relating to international affairs arranged in consultation with the major adviser.

International Affairs in Foreign Languages

1. Courses required for a major in a modern foreign language. (See Foreign Languages and Classics).
2. At least nine (9) hours each in economics, history, and political science from among the following courses or from among others with an international focus:
 - a. Economics (See Economics listing under International Affairs in Economics, 1 above.)
 - b. History (See History listing under International Affairs in Economics, 2a above.)
 - c. Political Science (See Political Science listing under International Affairs in Economics, 2b above.)
3. Additional electives relating to international affairs arranged in consultation with the major adviser.

International Affairs in History

1. At least twenty-four (24) hours in history in addition to the introductory courses. Among such courses may be those listed under International Affairs in Economics, 2a, History.
2. At least nine (9) hours each in economics and political science from among the following courses or from others with an International focus:
 - a. Economics (See Economics listing under International Affairs in Economics, 1 above.)
 - b. Political Science (See Political Science listing under International Affairs in Economics, 2b above.)
3. At least one year of a modern foreign language beyond the intermediate course.
4. Additional electives relating to international affairs arranged in consultation with the major adviser.

International Affairs in Political Science

1. At least twenty-four (24) hours in political science in addition to Pol 1. Among such courses may be those listed under International Affairs in Economics, 2b, above.
2. At least nine (9) hours each in economics and history from among the following courses or from others with an international focus:
 - a. Economics (See Economics listing under International Affairs in Economics, 1 above.)
 - b. History (See History listing under International Affairs in Economics, 2a above.)
3. At least one year of a modern foreign language beyond the intermediate course.
4. Additional electives relating to international affairs arranged in consultation with major adviser.

Detailed programs covering the last two years of study in each discipline may be obtained from the participating departments or from the Committee on International Affairs, 33 North Stevens, University of Maine, Orono, Maine 04473.

JOURNALISM (Jr)

Professor Hamilton; Associate Professor Miller; Assistant Professor Guesman
(Chairman); Faculty Associates Everett, Krall, Legere, Loring, Morison, Platt,
Thompson, Walas

The Journalism Department provides a sound foundation for the student intending to make a career in journalism and for the University student seeking a broader understanding of the field.

The undergraduate program leads to a bachelor of arts degree in journalism. The department endeavors to make its courses available to other than journalism students.

Broad scholarship is emphasized in the Journalism Department because the successful journalist must be competent to deal with news in virtually every form of human endeavor. Besides journalism courses, study in as many as possible of the disciplines in liberal arts is urged.

College of Arts and Sciences students declare a major at the end of the sophomore year. Freshmen and sophomores considering a major in journalism are urged to request a Journalism Department adviser in order to develop an interdisciplinary program of study that will be useful in their major field.

Laboratory facilities include editorial and business offices for two student publications (a semi-weekly newspaper, and a yearbook), daily Associated press wire service, two photography darkrooms, a newspaper production area. A daily television news broadcast aired on the state's public broadcasting network is used as a laboratory for students studying broadcast news. A radio station, a journalism library, audio-visual equipment, graphic arts and other aids to the journalist are available.

BASIC JOURNALISM REQUIREMENTS

A journalism major must select from one of two program sequences, news-editorial and advertising.

All majors, regardless of sequence, must complete a minimum of 24 credit hours. A grade of C or better must be earned in all journalism and selected option courses required for the degree.

Journalism majors are required to complete the following journalism courses:

<i>Jr 22. Survey of Mass Communications</i>	3
<i>Jr 31. Reporting and Newswriting I</i>	3
<i>Jr 32. Reporting and Newswriting II</i>	3
<i>Jr 75. Law of Publications</i>	3
<i>Jr 82. News Editing</i>	3
<i>Jr 94. Newspaper Lab</i>	3
or 95	
	18

In addition all majors must select at least one additional lab course for 3 credits.

Students selecting the advertising sequence must also complete the following courses:

<i>Jr 56. Introduction to Advertising</i>	
<i>Jr 57. Copywriting and Layout</i>	3
<i>Jr 58. Advertising Media</i>	3
	9

All journalism students must round out their programs by completing a program option of not less than 18 credit hours. The option selected may be one of those listed below or the student may build one of his choosing in such fields as science, environmental studies, education, social welfare, speech and/or broadcasting or others. The option should be selected in consultation with and approval by the Journalism Department faculty, not later than the beginning of the final year of course work.

Public Affairs Option — For the student preparing for news work involving government and society in the United States. Required courses: Pol 1, American Government; Pol 158, Public Opinion; Ec 10, Principles of Economics. Other recommended courses: Pol 3, State Government; Pol 159, Problems of American Government; Ec 21, Current Economic Problems; Pol 183-184, Constitutional Law; Ec 137, Comparative Economic Systems; Hy 3-4, United States History; My 1-2, Modern Society.

Foreign Affairs Option—The student must complete work in at least one language (French, German, Russian or Spanish) up to at least the 7/8 course level. In addition, he should select 18 hours in other courses appropriate for a background in international affairs. Some recommended courses: Ec 137, Comparative Economic Systems; Ec 139, International Trade and Commercial Policy; Hy 173, 174, American Diplomatic History; Jr 42, Foreign Press; Pol 173, 174, International Relations; Pol 187, International Law. Other courses should be chosen after adviser consultation and approval.

Art, Literature and Humanities Option—For the student interested in this broader background as preparation for a writing or broadcasting career. Students must elect 18 hours from courses in art, folklore, music, theater, English and American literature and comparative literature. With the help of his adviser, the student may also select from a few other appropriate course areas.

Newspaper Advertising Option—For the student preparing for a specialized advertising career in the newspaper industry. Required courses: Ba 9, Principles of Accounting; Ba 163, Marketing; Ba 167, Sales Management. Other recommended courses and areas of study included are Ec 10, Principles of Economics; At 1-2, Basic Drawing; Sh 3, Fundamentals of Public Speaking, advanced courses in business, and introductory and advanced courses in psychology and sociology.

All journalism majors must be able to type. All journalism course papers must be typewritten.

Students in the College of Life Sciences and Agriculture are also offered an option in Journalism. See Index.

Journalism students wishing to pursue a career in radio and television will want to choose among courses in broadcasting and film offered by the School of Performing Arts in the College.

Courses in Journalism (Jr)

22. Survey of Mass Communications—An introductory course in the structure and operation of modern news media and the social and political implications of their activities. Open to all freshmen and sophomores. Cr 3.

25. History of American Journalism—A review of the newspaper's role in American history, the development of modern mass communications. Cr 3.

31. Reporting and Newswriting I—A basic course in newswriting and reporting; intensive practice in developing newswriting techniques, accuracy, style, judgment and responsibility. Prerequisite: Not open to freshmen. Cr 3.

32. Reporting and Newswriting II—Further development of news gathering and reporting techniques, with emphasis given to in-depth, investigative reporting. Prerequisite: Jr 31. Cr 3.

42. The Foreign Press—Survey of the world press; its role in political, economic and cultural development. Cr 3. Not offered every year.

51. Publications Management—This course explores the advertising, circulation and editorial problems in publishing today. Cr 3.

56. Introduction to Advertising—Social and economic roles of advertising. Rate structures, agency practices, effective use of media. Advertising laws analyzed and discussed from the media point of view. Cr 3.

57. Advertising Copywriting and Layout—Survey and practice in the basic elements of the advertising communication process. Examination of various creative techniques for the mass communications media. Prerequisite: Jr. 56. Cr 3.

58. Advertising Media—Problems and procedures of the advertising industry as they pertain to media selection, support, promotion, research, organization, and consumer understanding. Prerequisite: Jr. 56 or consent of faculty. Cr 3.

61. Introduction to Photojournalism—For students desiring an understanding of photography as an effective medium of communications. Classroom and darkroom instruction. Basic principles of processing, composition, and the uses of photography in various media. (Not offered every year.) Cr 3.

75. Law of Publications—A study of the legal systems affecting the publishing and broadcasting worlds. Topics include libel, privacy, contempt, copyright, obscenity, censorship, prejudicial pre-trial publicity, and others as they develop within the society. Cr 3.

82. News Editing—A lab course, centered on operation of the modern news desk, aimed at developing editorial judgment and skills in preparing news for publication. Prerequisite: Jr. 32. Cr 3.

91. Staff Training — On-the-job training arranged by the department or the student under the direction of a qualified supervisor. Work performed must have meaningful relationship to communications industry. Prerequisite: permission only. Cr 3.

93. Problems in Journalism—A seminar for seniors with different topics each semester as new situations in the field develop. Frequent guests will act as discussion leaders. Prerequisite: Jr 32. Cr 3.

94.95. Newspaper Lab — Designed to give students a variety of practical experience in newspaper publishing. All majors required to take one semester of this lab. Prerequisite: Jr 32. Cr 3.

96.97. Broadcast News Lab — Designed to give students a variety of practical experience in broadcasting news with either the student radio station or the public broadcasting facilities. Prerequisite: Jr 32. Cr 3.

98. Special Topics Lab—A variety of lab topics, including newspaper makeup and design and magazine and feature writing. Other topics offered on non-regular basis. Prerequisite: Jr 32. Cr 3.

99. Advertising Lab — Designed to give students a variety of practical experiences in newspaper advertising. Required of all advertising sequence majors. Prerequisite: Jr 57 or 58. Cr 3.

MATHEMATICS

Professors Mairhuber (Chairman), Northam, Pogorzelski; Associate Professors Balakrishnan, Beard, Bresinsky, Byther, Dodge, G. Dube, Farlow, Feichtinger*, Ferguson, Geiger, Gupta, Haggard, Hamm, Hannula, Hooper, Langford, Locke, Murphy, Puri, Soule, Toole, Wohlgemuth**; Assistant Professors Brown, P. Dube, Fuentes**, Kostreva, Perry, Stearns; Instructors P. Gupta, Rasmussen; Graduate Assistants Mr. Bills, Miss Chan, Mrs. Davis, Mr. Edmunds, Mr. Frost, Mr. Hosmer, Mr. Leszcynski, Mr. Manson, Mr. Rich, Mr. Stone, Mr. Treger, Miss Young

Students majoring in mathematics may choose the standard mathematics program (A) or the applied mathematics option (B).

(A): Students in this program will normally complete the following courses in their freshman and sophomore years: Ms 26, 27, 28, 161, 162. To satisfy departmental requirements, a student must complete at least 39 hours of mathematics, including Ms 26, 27, 28, 125, 161, 162, 163, at least one of Ms 59, 131, 134, 151, 155, 159, 187, and at least one of Ms 145, 147, 165, 175. Courses numbered below 20 cannot be counted as part of the 39 hours. It is possible to obtain advanced placement, or to be excused from elementary courses by passing proficiency examinations for the department. A science requirement must be fulfilled outside the Mathematics Department. A foreign language is strongly recommended.

(B): To qualify for the applied mathematics option students must take Ms 26, 27, 28, 59, 162, 187, Ps 1 and 2. At least one course in each of the following groups and more than one course in two of the groups must also be taken: Group I (Probability and Statistics): Ms 131, 133, 137, 138. Group II (Analysis): Ms 151, 152, 153, 154, 159, 259. Group III (Linear and Non-Linear Programming): Ms 155, 156, 157, 158. Students must complete an 18-hour concentration of approved courses in some area other than mathematics, or two 12 hour concentrations in outside area. These concentrations may be elected in the following areas: Agricultural Engineering, Chemical Engineering, Chemistry, Civil Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, Physics.

The student's program of elective courses for the junior and senior years will depend upon his vocational plans. In selecting upper courses, the mathematics major will be assisted by a Mathematics Department member assigned by the department as his adviser. The score of required courses demanded of all mathematics majors has been selected as being necessary for work in any branch of mathematics.

The general requirements for the master of arts are given in the Graduate School catalog. Candidates for this degree in mathematics are expected to have substantial undergraduate training in this subject.

The course numbering scheme uses the tens digit of the course number to designate the area of the course according to the following table.

1-19	100-119	200-219	General Service, Education
20-29	120-129	220-229	Analysis

* On Leave 1976-77

** On Leave Spring 1977

30-39	130-139	230-239	Statistics
40-49	140-149	240-249	Logic Foundations, History
50-59	150-159	250-259	Applied Mathematics
60-69	160-169	260-269	Algebra
70-79	170-179	270-279	Geometry and Topology
80-89	180-189	280-289	Computer Science (Math) and Operations Research

COMPUTER SCIENCE (CS)

Students majoring in computer science normally complete Cs 181 and Cs 182 in their sophomore year. The following additional computer science courses are required for a major in computer science: Cs 175, 177, 183, 186, 189, 190, 199, and a course in simulation which is normally either Fy 172 or ChE 150. In addition each major is required to complete a 21 hour concentration in some other academic area. The courses in the concentration should be approved by the Computer Science Committee in the early part of the student's junior year in the program.

A course in statistics and Ec 10 are required of all majors.

Undergraduate courses

81. Computer Programming—Programming logic and techniques using a higher level language (usually **FORTRAN**). Introductory hardware concepts are covered as needed. A service course. Students are assigned programs from various areas of application and these programs are run on the University's computer. Cr 3.

175. Computing Management — Introduces and correlates the diverse executive and administrative techniques which are used in making managerial decisions in a computing environment. Prerequisite: Cs 182. Cr 3.

177. Information Analysis and System Design — Provides the knowledge and tools necessary to analyze problems of information gathering and processing, develops logical and physical designs and operational systems to solve them. Also develops techniques for estimating the cost of the system and evaluating its performance. Prerequisite: Cs 186. Cr 3.

181. Introduction to Computer Science I—Programming logic and techniques. Introduction to machine language, concentrates on one or more high level languages, typically Fortran and PL/I. Student programs run on the University's IBM 370 computer. Cr 3.

182. Introduction to Computer Science II—More emphasis on non-numeric algorithms and implementation of these algorithms in PL/I. Files, data structures, sorting, text processing, program standards and program efficiency. Prerequisite: 181. Cr 3.

183. Computers and Society — Consideration of the human and social consequences of the technological development and application of computers as viewed from the standpoints of the computer customer, the computer specialist, and the public. Prerequisite: junior standing. Cr 3.

IDL 185. (Ee/Cs) Computer Hardware Theory — A course designed to give computer science and other non-engineering students an understanding of the principles, operation and limitations of devices used in the circuitry of digital computers and associated equipment. Not open to students in College of Engineering and Science. Prerequisite: calculus, basic physics and permission. Rec 3, Cr 3.

186. Programming Languages—Formal description of programming languages including specification of syntax and semantics. Discussion of infix, prefix, and postfix notation with translation techniques. Topics include branching, grouping of statements, storage allocation, list and string processing, relation of language design on efficiency. Prerequisite: Ms 181 or equivalent. Cr 3.

189. Computer Architecture and Assembler Language—Introduction to concepts of modern computers, instruction formats, addressing techniques. Input-output processes, and interrupt handling. Programming aspects include assembler program segmentation and linkage. A specific assembler used to illustrate various topics. Prerequisite: 181 or equivalent. Cr 3.

190. Operating Systems — Study of the structure of current computer operating systems. Topics include I/O management, memory management, multiprogramming, linking loaders, real and virtual systems, batch and time sharing. Prerequisite: Cs 189. Cr 3.

198. Topics in Computer Science—Topics not regularly covered in other courses. Content is not fixed, but can be varied to suit current needs. May be taken more than once. Prerequisite: consent. Cr 1 to 3.

199. Senior Project—This course consists of two parts. The first part entails the completion of an on-the-job work project by the student. The second part is a seminar devoted to an analysis of the student's work experience. Prerequisite: permission. Cr 3.

MATHEMATICS (Ms)

GENERAL SERVICE EDUCATION

Undergraduate Courses

4. Algebra and Trigonometry—The trigonometric functions, their properties and applications. Basic topics in algebra for further work in mathematics. Prerequisite: two units high school algebra, one unit high school geometry. Admission to course requires passing department examination. Rec 5, Cr 4.

5/6. Elements of College Mathematics—A modern viewpoint surveying several topics such as mathematical logic, set theory, number theory, probability and statistics, abstract algebra, combinatorial topology, number systems, geometric transformations, and differential and integral calculus. Content may vary and not all listed topics will be studied each year. Cr 3.

7/8. The Structure of Arithmetic—A development of the real number system beginning with the sub-system of natural numbers and generalizing through the systems of integers, rational numbers, and real numbers. Properties of numbers, relations, and operations. Details of numeration systems. Primarily for the elementary school teacher. Cr 3.

(Note: Ms 7/8, Ms 9, Ms 10 may not be taken for credit by A & S students.)

9. Informal Geometry—Sets, points, lines, planes, and other configurations of one, two, and three dimensional geometry. Congruences, measurement, and constructions. Primarily for the elementary school teacher. Prerequisite: consent of the instructor or teaching experience in an elementary or junior high school. Cr 3.

10. Basic Algebra—An introductory treatment of mathematical operations on set symbols including procedures for solving simple equations and inequalities. Primarily for the elementary school teacher. Prerequisite: consent of the instructor or teaching experience in an elementary or junior high school. Cr 3.

13/14. Mathematics for Business and Economics—An introduction to elementary mathematical analysis and the calculus, with applications to business and economics. Mathematical models, elementary functions, systems of equations and inequalities, linear programming, matrix algebra, topics from the calculus. Prerequisite: 3 years H.S. Math. Cr 3.

15/16. Introduction to Statistics for Business and Economics—An introduction to the statistical aspect of experimental design, analysis of data, decision making, with special application to economic and business problems; emphasis on concepts and an understanding of the rational underlying statistical procedures. Prerequisite: Ms 13/14 or consent of instructor. Cr 3.

18. Statistics by Example—Concepts and terminology of statistics are introduced through the study of a wide range of statistical applications. Emphasis is on the commonly practiced techniques and interpretations of statistics. Cr 3.

19. Principles of Statistical Inference—An introductory course including such topics as distributions, sampling variability, estimation, hypothesis testing and regression. Cr 3.

105. Mathematics for Teachers—A modern approach to selected topics in mathematics with a critical examination of certain fundamental processes. Prerequisite: Ms 28. Cr 3.

Graduate Course (Ms)

200. Seminar in Mathematics Education—Cr 3.

ANALYSIS

Undergraduate Courses

26. Analytic Geometry and Calculus—Equations and graphs, differentiation and integration of simple functions, applications. Prerequisite: the equivalent of Ms 4. Admission to course requires passing department examination. Cr 4.

27. Analytic Geometry and Calculus—Differentiation and integration of algebraic, trigonometric, logarithmic and exponential functions; applications, infinite series. Prerequisite: Ms 26 or consent of the department. Cr 4.

28. Analytic Geometry and Calculus—Geometry of three dimensions, infinite series, partial derivatives; multiple integrals; applications. Prerequisite: Ms 27. Cr 4.

125/126. Advanced Calculus—Functions of real variables, limits, infinite series, partial differentiation, and other topics. Prerequisite Ms 161. Cr 3.

Graduate Courses

223/224. Functions of a Real Variable—Cr 3.

227/228. Functions of a Complex Variable—Cr 3.

STATISTICS

Undergraduate Courses (See also 15/16 and 19)

131. Introduction to Mathematical Statistics I — Basic probability, random variables and their distributions, functions of random variables, central limit theorem, estimation by confidence intervals, method of moments and method of maximum likelihood, etc. Particular emphasis is given to the normal distribution and its related sampling distributions. Prerequisite: Ms 28. Cr 3.

132. Introduction to Mathematical Statistics II - Statistical Inference — Estimation and testing of statistical hypotheses; sufficiency and completeness, Cramer Rao inequality, Neyman Pearson fundamental lemma, topics from nonparametric tests, correlation and regression, method of least squares, analysis of variance and design of experiments. Prerequisite: Ms 131. Cr 3.

133. Probabilistic Models in Operations Research — The study of mathematical models which involve random processes. Topics discussed will include Markov chains, waiting line models, simulation, inventory theory, decision analysis and reliability theory. Emphasis will be placed on setting up problems that occur in business, industry, and research. Prerequisite: Ms 131 or equivalent. Cr 3.

134. Introduction to Probability and Statistics for Scientists and Engineers—Basic probability, random variables, their distributions, estimation and testing of hypotheses, analysis of variance, applications to reliability, life testing quality control, etc. Emphasis on applications in industry and engineering. Prerequisite: Ms 28. Cr 4.

136. Introduction to Sampling Methods—Basic sampling schemes: simple random, stratified, cluster, and multi-stage. Biases and errors. Ratio and regression estimation. Prerequisite: Ms 131. Not given every year. Rec 2, Lab 2, Cr 3.

137. Statistical Methods in Research—An introduction to Analysis of Variance and Regression Analysis using a unifying approach to theory; application and illustrations from many fields. Prerequisite: Ms 19 or Ms 131 or permission. Rec 2, Lab 2, Cr 3.

138. Design of Experiments—Continuation of Ms 167, with consideration of non-orthogonal designs in Analysis of Variance, and an introduction to other experimental design techniques which are widely applicable. Prerequisite: Ms 137. Rec 2, Lab 2. Cr 3.

Graduate Courses

231/232. Mathematical Statistics I and II—Cr 3.

LOGIC—FOUNDATIONS—HISTORY

Undergraduate Courses

41. Introduction to Mathematical Logic and the Nature of Proof—An introductory course designed specifically to view logic and the nature of mathematics, proof with concepts and symbolism as used throughout modern mathematics. Prerequisite: Ms 161. Cr 2.

141. Mathematical Logic—Sentential calculi, deduction theorem and completeness theorem. Prerequisite: One year college mathematics. Cr 3.

145. History of Mathematics—The development of elementary mathematics from ancient to modern times. Prerequisite: Ms 27. Cr 3.

147/148 Foundations of Mathematics—Fundamental concepts and methods of mathematics; viewpoints on the foundation of mathematics. Not given every year. Prerequisite: Ms 28 or permission. Cr 3.

APPLIED MATHEMATICS

Undergraduate Courses

59. Differential Equations—An introduction to ordinary differential equations; applications. Prerequisite: Ms 28. Cr 4.

151. Introduction to Vector and Tensor Analysis—Scalar and vector fields; Newtonian kinematics and Kepler's laws of planetary motion. Gradient, divergence, and curl; the theorems of Green, Stokes, and Gauss; curvilinear coordinates; contravariant and covariant tensors; absolute derivative of a tensor field; geodesics; Riemannian curvature. Prerequisite: Ms 28. Cr 3.

152. Introduction to Complex Variables—Analytic functions, integration, series, and mappings. Applications. Prerequisite: Ms 28, Cr 3.

153/154. Partial Differential Equations—Introduction to general properties of partial differential equations followed by solutions of specific equations. Techniques include eigenfunction expansions, operational methods, and Green's functions. Prerequisite: Ms 59. Cr 3.

155. Discrete Optimization Methods in Operations Research—The study of linear models for solving problems involving the allocation of limited resources to activities in such a manner that the total output of the systems is optimized. These models include linear programming, network problems, scheduling theory, and others. Prerequisite: Cs 181 or its equivalent. Cr 3.

156. Nonlinear and Dynamic Optimization Methods in Operations Research—The study of nonlinear and dynamic models that occur in business, science, and engineering. These models include optimization of unconstrained and constrained algebraic functions, dynamic programming, geometric programming and control theory. The emphasis is on solving practical problems. Prerequisite: Ms 28, Cs 181 or equivalent. This course normally follows Ms 155. Cr 3.

157. Non-Linear Programming I—Introduction to non-linear programming problems, convex set theory, linear programming and classical optimization techniques, convex functions, approximation methods for solution of problems involving separable functions, stochastic programming, Kuhn-Tucker theory, and quadratic programming. Prerequisite: Ms 28 and Ms 155. Recommended: Ms 156, Ms 162, Ms 181, Ms 187, and permission. Cr 3.

158. Non-Linear Programming II—Integer programming including sequencing problems, project planning, manpower scheduling and capital budgeting; gradient methods, Arrow-Hurwicz concave programming, dynamic programming including manpower loading and inventory problems, dynamic formulation of transportation problems, equipment replacement, production scheduling and inventory control problems; Markov processes and optimal strategies. Prerequisite: Ms 157. Cr 3.

159. Methods of Applied Mathematics I—Advanced theoretical course. Topics covered with applications to physical sciences: complex variables, vector and tensor analysis, series solution of differential equations near singular points, linear algebra and determinants. Prerequisite: Ms 59 or consent. Cr 3.

Graduate Courses

255/256. Theory of Ordinary Differential Equations—Cr 3.

259. Methods of Applied Mathematics II—Cr 3.

ALGEBRA

Undergraduate Courses

161. The Structure of the Real Number System—Development of the arithmetic and order properties of the integers, rationals, and real numbers. Division algorithm, well-ordering, mathematical induction, fundamental theorem of arithmetic, sequences and series, and consequences of the completeness property of the real numbers. Prerequisite: Ms 27. Cr 3.

162. Linear Algebra—An introduction to theory of vector spaces and linear transformations. Prerequisite: Ms 28. Cr 4.

163/164 Introduction to Abstract Algebra—Abstract algebraic structures including groups, rings, ideals, integral domains and fields. Prerequisite: Ms 161 and Ms 162. Cr 3.

165. Theory of Numbers—Elementary properties of integers: divisibility, uniqueness of prime factorization. Prerequisites: Ms 107/108 or Ms 161. Cr 3.

166. Theory of Equations—Techniques for finding and approximating roots of polynomial equations, synthetic division, factorization of polynomials, solution of linear systems of equations, elementary theory of finite fields. Prerequisite: Ms 161. Cr 3.

Graduate Course

263/264. *Abstract Algebra*—Cr 3.

GEOMETRY AND TOPOLOGY

Undergraduate Courses

171/172. 191/192 *Differential Geometry*—Applications of calculus to the study of space curves and surfaces. Not given every year. Prerequisite: Ms 28. Cr 3.

174. *Projective Geometry*—Incidence axioms, duality, perspectivities and projectivities, Desargues' Theorem, Pappus' Theorem, Fundamental Theorem, coordinatization, finite geometries. Prerequisite: Ms 162. Cr 3.

175/176. *Higher Geometry*—Constructions. Properties of E^2 . Ceva's and Menelaus' theorems with applications—Desargues', Pappus' and Pascal's theorems. Isometries. Axiomatic approach to one of the geometries. Algebraic models for Geometry. Klein's Erlanger program. Classical construction problems. Prerequisite: Ms 28 or permission. Cr 3.

Graduate Courses

277/278. *Topology*—Cr 3.

COMPUTER SCIENCE (Ms)

Undergraduate Courses

187. *Numerical Analysis*—Computational methods for electronic computers; exercises on the IBM 370 for interpolation, simultaneous linear algebraic equations, non-linear and polynomial equations, numerical integration, ordinary and partial differential equations. Prerequisite: Ms 28 and Ms 181. Cr 3.

188. *Graph Theory*—General survey of a number of topics in graph theory. Topics include: Eulerian and Hamiltonian lines, factors, colorings of graphs, embedding of graphs in surfaces, room squares and various decomposition problems. Prerequisite: Ms 28. Cr 3.

SELECTED TOPICS IN MATHEMATICS; THESIS

Undergraduate Courses

0: The tens digit specifies the area in which the course is given. e.g. Ms 60—Topics in algebra.

-0 *Topics in Mathematics*—Topics in mathematics not regularly covered in other courses. Content is not fixed, but can be varied to suit current needs. The course may, with permission of the department, be taken more than once. Prerequisite: consent of the department. Cr 1 to 3.

1-0: the tens digit specifies the area in which the course is given. 120—Analysis, 130—Statistics, etc.

1-0 *Selected Topics in Mathematics*—Advanced topics in mathematics not regularly covered in other courses. The content is not fixed but can be varied to suit current needs. The course may, with permission of the department, be taken more than once. Prerequisite: permission. Cr 2 or 3.

Graduate Courses

2-0: The tens digit specifies the area in which the course is given.

2-0 *Advanced Topics in Mathematics*—Cr 2 or 3.

399. *Graduate Thesis*—Cr Ar.

MODERN SOCIETY (My)

Associate Professor Scontras (Chairman)

Modern Society (My 1.2) is an introductory and interdisciplinary course in social science designed to acquaint the student with some of the pivotal ideas in sociology, social psychology, economics and political science, and the contribution of such ideas to the understanding of human behavior. Lectures and discussion.

Informal meetings are held to discuss course-related materials and ideas that students may wish to explore beyond the limits of regular classroom lectures and discussions. Participation in such meetings is voluntary.

Modern Society is recommended to any student who has not had a minimum of two years of social science at the college level. Three credits.

SCHOOL OF PERFORMING ARTS

DIVISION OF MUSIC (Mc)

Professors Godwin (Chairman), Cazden; Associate Professors Collins, Foley, Hallman, Nesbit; Assistant Professors Heath, Lindley, Stedry, Stratton; Instructors Hall, Mrs. Garwood, Mrs. Heath, Mrs. Mummé.

The curricula of the Department of Music lead to baccalaureate degrees as follows:

1. ***Bachelor of Arts Degree*** with a major in music
 This program is designed for the study of music within a strong liberal arts curriculum. It offers a broad coverage of the field of music with emphasis upon the study of the history and theory of music. It furnishes an appropriate background for prospective candidates for advanced degrees who are preparing for such careers as musicologists, composers, and music librarians. It does not qualify the graduate for certification as a public school music teacher. Candidates for the degree are expected to attain a level of performing ability equivalent to that required at the completion of the sophomore year in the Bachelor of Music program. A senior project is required in lieu of a recital. Total number of required semester hours in music: 48

Music Theory	20
Music History and Literature	10
Performance Emphasis (7 Semesters)	7
Senior Project	1
Music Organization	4
Music Electives (theory or history)	6
	48

2. ***Bachelor of Science in Music Education***
 This is a four-year professional degree for students in the College of Education who intend to make music a career either as a public school teacher or supervisor of music. Majors in music education will register in the College of Education and follow the curriculum outlined there. The specific requirements for the degree may be obtained from the Department of Music. The degree provides for many professional opportunities and serves also as preparation for graduate study in music education. Upon satisfactory completion of the music education course of study the student is certified to teach both elementary and secondary music. A half-hour recital is required in the junior or senior year. Total number of required semester hours in music: 68

Music Theory	22
Music History and Literature	10
Major performance area	12
Music Organization	7
Instrumental concentration	
or	
Vocal/Keyboard concentration	17
	68

3. ***Bachelor of Music***
 This degree is designed to assist the gifted music student to prepare for a career in music performance. It serves also as preparation for graduate study in music and teaching at the college level. Emphasis is placed on performance, music theory, music history, and studies in the liberal arts. The degree is granted in the following applied music areas: Strings, Woodwinds, Brass, Piano, Voice, and Pipe Organ. Graduation requirements include appropriate proficiency in playing or singing, excellent memory and substantial repertoire, and musicianship of a high order.

A half-hour recital is required in the junior year, and a full recital in the senior year.

Total number of required semester hours in music. 84

Music Theory	28
Music History and Literature	16
Performance Major	16
Performance Minor	4
Music Organization	8
Conducting, Literature	6
Elective in Music	6
	84

A proficiency examination in piano must be passed by all degree students in music. See the music adviser for details.

All entering students are required to take a placement examination in piano.

Applied Music Fees

- For the Music Major:
No fees will be charged for *required* private instruction.
- For the non-music major and for instruction *not* required of music majors: A fee of \$60 per semester will be charged for one ½-hour lesson per week; a fee of \$120 per semester will be charged for one 1-hour lesson per week. Private instruction for the non-music major and instruction not required for the music major is contingent upon the availability of time of the instructor. Arrangements for such instruction must be made through the office of the Music Department.

Practice facilities are provided in the music building. The University provides, so far as possible, practice opportunities for students who desire to take applied music for credit.

After being accepted by a teacher, the student should report immediately to the music office for a fee statement. The lesson fee must be paid to the Business Office before lessons can begin.

Courses in Music Performance

The Department of Music provides private instruction in various instruments and voice. The student should enroll under one of the following numbers

	Performance Minor B.A. (Major in music) candidates, all others	Performance Major B. Mus., B.S. in Mus. Educ. candidates
*First level	Mc 1-2 Cr 1	Mc 10-20 Cr 2
Second level	Mc 3-4 Cr 1	Mc 30-40 Cr 2
Third level	Mc 5-6 Cr 1	Mc 50-60 Cr 2
Fourth level	Mc 7-8 Cr 1	Mc 70-80 Cr 2

* The level is roughly the equivalent of the year, but the student who does not meet the requirements for the level at the end of each year as determined by the jury examination will continue on the previous level until the requirements are met. Students will be reviewed at the end of their sophomore year by a jury composed of the faculty of the Department of Music to determine whether they should be advanced to upper level standing in applied music.

Instruction is provided in the following areas. When enrolling, add the appropriate division noted below after the course number to indicate the instrument or voice.

Example: Mc 10—1 (voice)

Voice,	1	Viola,	5	Oboe,	9	Trumpet,	13
Piano,	2	Cello,	6	Clarinet,	10	Baritone Horn,	14
Organ,	3	Bass,	7	Bassoon,	11	Trombone,	15
Violin,	4	Flute,	8	French Horn,	12	Tuba,	16
						Percussion,	17
						Saxophone,	18

Candidates for B. Mus., B.S. in Mus. Ed. enroll for two hours credit for the major instrument or voice, one hour for the second instrument or voice. B.A. (major in music) candidates, *all other students* enroll for one hour credit.

Courses in applied music and music performance may be repeated for credit.

Each student taking instruction in an applied area must take an examination before a jury of the faculty of music at the end of each semester. Attendance at the Tuesday afternoon student recital is required. Prerequisite: qualifying test; see the Chairman of the Department of Music.

Mc 98. Senior Project—A research paper, original composition, or by special permission, a lecture-recital presented in lieu of a recital. Required of all music majors in the Bachelor of Arts degree program. Accomplished under the guidance of an assigned faculty member during the senior year. Cr 1.

Musical Organizations and Ensembles (Mc 0)

1.2. University Singers—Rehearsal and performance of choral concert repertoire. Membership through audition requires sight reading ability. Extended concert tours. Four hours of rehearsal a week. Attendance at all rehearsals and public performances required. May be repeated for credit. Lab 4, Cr 1.

3.4. Oratorio Society—Rehearsal and performance of major choral works. Membership through audition. Attendance at all rehearsals and public performances required. May be repeated for credit. Lab 2, Cr 1.

5.6. Varsity Women's Glee Club—Rehearsal and performance of choral music written expressly for this performing medium. Membership through audition. Attendance at all rehearsals and public performances required. A limited touring organization. May be repeated for credit. Lab 2, Cr 1.

7.8. Varsity Men's Glee Club—Rehearsal and performance of choral music written expressly for this performing medium. Membership through audition. Attendance at all rehearsals and public performances required. A limited touring organization. May be repeated for credit. Lab 2, Cr 1.

9.10. University Chorus—Rehearsal and performance of choral music appropriate for choral singers with limited background and training. No audition required. Open to all students. Attendance at all rehearsals and public performances required. May be repeated for credit. Lab 3, Cr 1.

11. Band—During football season the band functions as a marching unit; the remainder of the semester is spent in the rehearsal and performance of concert band repertoire. Membership through audition. Attendance at all rehearsals and public performances required. May be repeated for credit. (Fall semester only.) Lab 4, Cr 1.

12. Concert Band—Rehearsal and performance of standard band repertoire. Membership through audition, or previous participation in Marching Band. Attendance at all rehearsals and public performances required. Extended concert tours. May be repeated for credit. (Spring semester only.) Lab 4, Cr 1.

13. Varsity Band—Organized each fall following football season from members of the University Band who are not selected for the Concert Band. Lab 2, Cr 1.

21.22. University Orchestra—Rehearsal and performance of standard orchestral repertoire. Membership through audition. Attendance at all rehearsals and public performances required. May be repeated for credit. Lab 4, Cr 1.

31. Chamber Singers—The study and performance of chamber music for the voice. May be repeated for credit. Lab 2, Cr 1.

32. Opera Workshop—Rehearsal and performance of standard opera repertory. Acceptance by audition. May be repeated for credit. Lab 3, Cr 1.

41. Brass Ensemble—The study and performance of chamber music for brass instruments. May be repeated for credit. Lab 2, Cr 1.

42. Trombone Ensemble—The study and performance of music for trombones. May be repeated for credit. Lab 2, Cr 1.

43. 20th Century Music Ensemble—Rehearsal and performance of 20th century instrumental music with emphasis on improvisation. May be repeated for credit. Prerequisite: permission of instructor. Cr 1.

45.46. Woodwind Ensemble—The study and performance of chamber music for woodwind instruments. May be repeated for credit. Lab 2, Cr 1.

47. Horn Ensemble—Rehearsal and performance of music written for french horns. May be repeated for credit. Prerequisite: permission of instructor. Lab 2, Cr 1.

49.50. String Ensemble—The study and performance of chamber music for string instruments. May be repeated for credit. Lab 2, Cr 1.

Mc O 70. Karl Mellon Clarinet Choir—Rehearsal and performance of music written for clarinet choir. May be repeated for credit. Prerequisite: Permission of instructor. Lab 2, Cr 1.

Courses in Music Education (Mc E)

Mc E 1. Music Methods for the Elementary Teacher—Methods and materials for relating music to the elementary school child. No previous experience in music required. Cr 3.

3. Music in General Education—Methods, materials, organization and administration of the music curriculum in the public schools. Prerequisite: Mc T 14 A and Mc L 22. Cr 3.

5-6. Music for the Elementary Classroom Teacher—Basic musicianship and approaches to the musical training of the elementary school child. Emphasis is placed upon the achievement and utilization of elemental performance skills in the areas of singing, rhythmic movement, aural, analysis, composition, improvisation and instrumental techniques. Lec 1, Lab 2, Cr 2.

21. Teaching of General Music—Organization and teaching of general music classes in the junior high school. Prerequisite: Mc E 3, or equivalent. Cr 3.

Courses in Performance Techniques (Mc P)

1.2. Voice Class—The systematic development of the principles of good singing through class method approach. Prerequisite: Mc T 1 or equivalent. Lab 2, Cr 1.

5/6. Piano Class—Designed to give a basic command of the keyboard. Recommended especially for students preparing to take the proficiency examination in secondary piano. May be taken as an introduction to piano performance for the beginning student. Prerequisite: Mc T 1 or equivalent. Lab 2, Cr 1.

9/10. String Class—Basic skills pertaining to each of the four string instruments. First semester, study of all instruments; second semester, concentrated work on one instrument. Prerequisite: Mc T 1 or equivalent. First semester: Lab 4, Cr 2. Second semester: Lab 2, Cr 1.

13. Woodwind Class—Basic skills pertaining to the woodwind instruments. Prerequisite: Mc T 1, or equivalent. Lab 4, Cr 2.

17. Brass Class—Basic skills pertaining to the brass instruments. Prerequisite: Mc T 1, or equivalent. Lab 4, Cr 2.

21. Percussion Class—Basic skills pertaining to the percussion instruments. Prerequisite: Mc T 1, or equivalent. Lab 2, Cr 1.

40. Basic Conducting—Conducting techniques; emphasis on practical application to vocal and instrumental groups. Cr 2.

41. Choral Conducting and Literature—Basic choral conducting, and study of problems in the organization and training of choral groups. Prerequisite: Mc P40, Cr 3.

45. Instrumental Conducting and Literature—Basic instrumental conducting, and study of problems in the organization and training of bands and orchestras, Prerequisite: Mc P40, Cr 3.

51.52. Accompanying—Fulfilled through accompanying students in lessons and recital or as accompanist for major performing organization. Lab 2, Cr 1.

101/102. Performance Studies—Applied study in piano, voice, organ, stringed instruments, and orchestral instruments at the advanced level. Intensive study of performance techniques and concentration on repertoire and preparation of material which shall be of such advancement technically and interpretatively as to compare favorably with a professional recital program. May be repeated for credit. Prerequisite: Mc 80 or equivalent. Cr 2.

105/106. Keyboard Musicianship—A comprehensive application of the study of harmony to the keyboard, directed towards the development of sight-reading and accompanying skills, keyboard score-reading, transposition, harmonization at sight, improvisation and the realization of figured bass or other chording schemes. Prerequisite: Mc T 14, Mc P 6 or equivalent level, including completion of Piano Proficiency requirements. Cr 2.

111/112. Advanced Chamber Music—The study and performance of the standard ensemble literature for string instruments, wind instruments, and piano. Cr 2.

Courses in Music History (McH)

1/2. History of Western Music—The history of music from antiquity to the present day with a technical study of the significant musical trends. Prerequisite: For the major, Mc L 22, or sophomore standing. For the general student, permission of the instructor. Cr 3.

117. Music of the Baroque Period—A study of music in the 17th and first half of the 18th centuries; from Monteverdi and Schütz to Bach and Handel. Prerequisite: Mc H 2, or permission of the instructor. Cr 3.

119. Music of the Classical Period—The changing style in form and content as evolved by Haydn, Mozart and Beethoven viewed against the background of social and political conditions of the time. Prerequisite: Mc H 2, or permission of the instructor. Cr 3.

121. Music of the Romantic Period—Study of musical expression during the 19th century with emphasis on the intellectual foundations of the romantic movement. Study and detailed analysis of representative works from Beethoven through Debussy. Prerequisite: Mc H 2, or permission of instructor. Cr 3.

123. Music of the Twentieth Century—Trends in contemporary music and their relationship to the cultural and political life of our time. Prerequisite: Mc H 2, or permission of the instructor. Cr 3.

Courses in Music Literature (Mc L)

1/2. Understanding Music—First semester: the nature of music, and the basic elements necessary for intelligent listening exemplified in representative works of the great composers. Second semester: music literature, emphasizing a broad acquaintance with the basic repertory, stylistic and aesthetic criteria and a critical and analytic approach to listening. For the general student. Cr 3.

3. Vocal Literature—A survey through discussion and performance of vocal literature from the 18th century to the present day to include classic Italian songs, German Lieder, French art songs, and contemporary American and British songs. Cr 1.

5. Woodwind Literature—A survey through discussion and performance of woodwind literature to familiarize the student with the standard repertory. Cr 1.

7. Brass Literature—A survey through discussion and performance of brass literature to familiarize the student with the standard repertory. Cr 1.

9. String Literature—A survey through discussion and performance of string literature to familiarize the student with the standard repertory to include that composed for string quartet. Cr 1.

11. Piano Literature—A survey through performance and discussion of standard literature for piano. Cr 1.

13. Organ Literature—A survey through discussion and performance of standard literature for organ. Cr 1.

21/22. Survey of Music Literature—A comparative study of styles, characteristics, forms, and performing mediums of music from the Renaissance to the present. Primarily for music majors. Cr 2.

Courses in Music Theory (Mc T)

1. Fundamentals of Music—An elemental study of the dimensions and basic characteristics of musical sounds, with primary emphasis upon the development of skills and concepts through creating, performing and analyzation. For the general student. Cr 3.

11A/12A. Elementary Harmony—Diatonic chordal relationships through written work, analysis, and keyboard application. To be taken concurrently with Mc T 11B/12B. Primarily for music majors. Cr 3.

11B/12B. Elementary Sight Singing and Ear Training—Sight singing, ear training, dictation. To be taken concurrently with Mc T 11A/12A. Lab 2, Cr 1.

13A/14A. Advanced Harmony—A continuation of Mc T 11A/12A. Chromatic chordal relationships and 20th century harmonic practice. To be taken concurrently with Mc T 13B/14B. Prerequisite: Mc T 12A. Cr 3.

13B/14B. Advanced Sight Singing and Ear Training—A continuation of Mc T 11B; 12B. To be taken concurrently with Mc T 13A/14A. Lab 2, Cr 1.

99. Music Theory Review—Review of basic traditional harmonic practice, contrapuntal techniques, and structural analysis. Prerequisites: Mc T 14A and Mc T 152/153 or equivalents, or consent of instructor. Not offered for graduate credit. Cr 3.

121. Modal Counterpoint—Contrapuntal techniques as practiced by composers of the 16th and 17th centuries. Written exercises and analysis. Prerequisite: Mc T 12A, or permission of instructor. Cr 2.

122. Tonal Counterpoint—Contrapuntal techniques as practiced by composers of the 18th and 19th centuries. Written exercises and analysis. Prerequisite: Mc T 12A. Cr 2.

152/153. Analytical Orchestration—The practical application of harmonic and structural analysis of musical forms as concerned with orchestral and band instrumentation and reductions. Prerequisite: Mc T 14A. Cr 3.

155/156. Canon and Fugue—Analysis of masterpieces in forms, with particular concentration on the canons and fugues of Bach, Composition projects in these polyphonic types. Prerequisite: Mc T 14B, and Mc T 122, or its equivalent. Cr 2.

161. Composition I (Small Forms)—Creative writing in the smaller forms including harmonic textures and use of contrapuntal devices. Prerequisite: a working knowledge of harmony and counterpoint and permission of the instructor. May be repeated for credit. Cr 2.

163. Composition II (Large Forms)—Continuation of MC T 161. Creative writing for voice and instruments in the large forms. Prerequisite: MC T 161. May be repeated for credit. Cr 2.

Graduate Courses (Mc)

230/231. Advanced Choral Conducting and Literature—Cr 3.

240. Wind Literature and Conducting—Cr 3.

250. Master Course in Conducting—Cr 3.

290. Psychology of Music—Cr 3.

300. Introduction to Graduate Study in Music—Cr 3.

310. Vocal Performance—Cr 2.

311. Keyboard Performance—Cr 2.

312. String Instrument Performance—Cr 2.

313. Wind Instrument and Percussion Performance—Cr 2.

398. Special Studies in Music—Cr 3.

DIVISION OF BROADCASTING/FILM

Associate Professor Scher (Division Head); Assistant Professor Bowler

The Broadcasting-Film Division offers a specialized program of study for those students wishing to enter the radio, television or motion picture fields, leading to the degree Bachelor of Performing Arts - Broadcasting/Film. Courses are open also to general students who seek to deepen their understanding of these media and to gain a working knowledge of creative skills and methods.

Student majors follow a prescribed sequence of courses in the concentration and also select a supporting subject area that is relevant to their professional goals. It is recommended that the following supporting areas be given particular consideration as disciplines that strengthen the major field of study: Music and Theatre (the co-divisions of the School of Performing Arts), Journalism, Sociology, Political Science. Other options may be considered, subject to the approval of the student's major adviser.

Normally, students declare their major in the latter half of their sophomore year. It is advisable, however, that prospective majors familiarize themselves with the Broadcasting-Film program before that time and consult with area faculty members in order to work out a tentative schedule.

All students are invited to apply for staff positions or program assignments with radio station WMEB-FM, which is operated by the division as a year-round radio service for the University community and the general public. Work-study opportunities with local and regional radio, TV and film facilities are available to major students on a selective basis.

Courses in Broadcasting (RTV)

21. Introduction to Broadcasting — Survey of the radio and television media and related communications services as they function in the United States. Developmental history, social, economic and political influences, systems of content and dissemination. Cr 3.

22. Basic Audio Techniques — An exploration of production techniques in sound as applied in Radio, Television and Film. Cr 3.

23. Radio Laboratory — Field experience in radio programming, production and administration primarily through the student station, WMEB-FM. Prerequisite: RTV 21 and 22 and/or permission. Cr 1. (Repeatable to 3 hrs)

170. Broadcasting and Government — The relationship between station operation and governmental policy or regulation. Special emphasis on the licensee's public service responsibilities as established by legislative and judicial precedents. Prerequisite: RTV 21 or permission. Cr 3.

171. Writing for Broadcasting — Application of writing skills and techniques to the requirements of television and radio. Preparation of different forms of continuity copy and scripted

dramatic material. The nature of the script market; script evaluation. Prerequisite: RTV 21 or permission. Cr 3.

172. *Advanced Audio Techniques* — The creative application of audio techniques in developing programs for radio. Prerequisite: RTV 22 and permission. Cr 3.

173. *Basic Television Production* — Theory and processes of television and video production. Emphasis on equipment and procedures — their potentials and limitations. Prerequisite: junior or senior or permission. Cr 3.

174. *Advanced Television Production* — Creation, production and direction of television and video presentations concentrating on imaginative and original uses of television and video techniques. Prerequisite: RTV 173. Cr 3.

177. *Using Television in the Classroom* — The course will explore the medium of television, the real or potential impact of its content (violence for example) and seek ways that teachers may use the "curriculum" of television as a classroom resource. Cr 3.

178. *Television Laboratory* — A field experience for advanced television students providing the opportunity to work on a regular basis with qualified television professionals. Prerequisite: RTV 173 and permission. Cr 3.

179. *Internship* — Selected students will gain practical experience by working in various capacities at a radio or television station, film production facility, or other related professional activity. Limited to seniors and by permission. Cr 3-6.

Courses in Film (FLM)

24. *History of Film* — Historical development of the film as art and institution. Survey of major creative innovations in form and content, significant film makers and film trends in representative countries. Lec 2, Lab 2, Cr 3.

124. *The American Film and Society* — The influence of movies on American society from the 1930's to the present. Emphasis on popular genres (gangster films, Westerns, comedies), our responses to them, the forces that shape them. Viewing of selected feature films. Limited to juniors and seniors. Lec 2, Lab 2, Cr 3.

175. *Techniques of Film Production* — An introduction to the theory and practice of making films. Included will be experiences in planning, filming and editing short film exercises ranging from animation to small documentaries. Student fee to cover costs of film and processing. Prerequisite: juniors and seniors and permission. Cr 3.

DIVISION OF THEATRE (Th)

Professors Colbath (Director, Maine Masque Theatre) and Bost, Associate Professors Cyrus and Wilkinson

The major in theatre leads to the B.A. degree in Performing Arts — Theatre. Specific requirements for the program are available at the office of the School of Performing Arts (125 Lord), or from the office of the Theatre Division (101 E. Annex).

All majors are expected to take advantage of the laboratory opportunities offered by the major production and studio production programs of the Maine Masque Theatre.

A program leading to the Master of Arts degree in Speech, with concentration in theatre, is offered through the Department of Speech Communication. Students may apply for Thesis (including Creative Thesis), or Non-Thesis routes. Further details may be found in the Graduate School Catalog.

Courses in Theatre (Th)

The Maine Masque Theatre presents four to five major productions each year, in addition to other laboratory or studio programs, and serves as a practical training ground in theatre. All students in the University are eligible to read for plays to be produced and may participate in the other areas of the theatre.

11. *Introduction to Theatre*—The nature of the theatre medium, its basic elements and techniques. Emphasis on the principles that underlie theatre practice and the process by which plays are translated into theatrical expression. For the general student as well as prospective theatre majors. Cr 3.

12.13. *Masterpieces of World Drama*—World drama, both Eastern and Western, as literature and as theatre. Stress on dramatic form and content, and on the uniqueness of the drama to reflect the philosophical, social, and political environment. Fall semester: Greek drama through the Renaissance. Spring semester: Restoration through 19th century, and Asian drama. Cr 3.

14.15. Stagecraft—Technical production in the areas of scene design, lighting, costumes, properties, and makeup. Projects and laboratory work associated with theatre productions required. Fall semester: scene design and lighting; Spring semester: costumes, properties, and makeup. Th 11 recommended. Lec 2, Lab 2, Cr 3.

16. Play Production—The responsibilities of the director and the basic principles of stage directing, including choosing and analyzing plays, scheduling rehearsals, blocking action, and determining stage business. Backstage work on major and laboratory theatre production is recommended. Lec 2, Lab 2, Cr 3.

17. Fundamentals of Acting—The basic skills of acting, including the actor's internal preparation for playing a role and the developing of his external techniques for projecting the role to an audience. Lec 2, Lab 2, Cr 3.

68. Theatre Practicum—Supervised experience in Maine Masque Theatre productions in such areas as: acting, stage managing, publicity, scenery, lighting, and costumes. Prerequisite: six hours of theatre courses and permission of Director of Maine Masque Theatre. May be repeated for a maximum of three hours. Cr 1.

161.162. Theatre History—The development of the drama, physical theatre, and modes of production. Fall semester: Greek theatre through the Renaissance. Spring semester: Restoration to the present day. Limited to juniors and seniors. Cr 3.

163. Scene Designing—Principles, methods, and materials used in scene designing. Laboratory projects in preparing the complete design for a particular production, including drawings and plans. Prerequisite: Th 14. Cr 3.

164. Stage Lighting—Principles, methods, and materials used in stage lighting, including their artistic and technical applications. Projects will include problems in lighting particular productions. Prerequisite Th 14. Cr 3.

165. Stage Costuming—An introduction to aspects of stage costuming including history, aesthetic principles, and practical application to actual productions. Prerequisite: Th 15. (Not offered every year.) Cr 3.

166. Stage Directing—The translation of all aspects of the theatre production into an artistic unity. Emphasis on theatre aesthetics. Practice in the directing of short plays, with particular attention to the director's work with the actor. Prerequisite: Th 16. Limited to juniors and seniors. Lec 2, Lab 2, Cr 3.

167. Advanced Acting—Development of the individual actor's versatility, with emphasis on the actor's exploration of himself as an instrument. Practice in broadening basic acting skills, role interpretation, and characterization. Limited to juniors and seniors. Prerequisite: Th 17. Lec 2, Lab 2, Cr 3.

Graduate Courses in Theatre

(Through Department of Speech Communication) (Sc)

260. *Production of Pre-Modern Drama* — Cr 3.

261. *Production of Modern Drama* — Cr 3.

263. *American Theatre* — Cr 3.

264. *Asian Theatre* — Cr 3.

265. *Dramatic Theory* — Cr 3.

267. *Drama Colloquium* — Cr 3.

301. *Seminar in Research Methods* — Cr 3.

367. *Special Studies in Theatre* — Cr 3.

369. *Theatre Laboratory* — Cr 3.

390.391. *Directed Research* — Cr 1-3.

399. *Graduate Thesis* — Cr Ar.

SCHOOL OF NURSING

Associate Professors Dorbacker (Acting Dean), Dubowick, Jensen, Malmude, Roscoe, Shoobs, Stone (Chairman, Department of Advanced Medical-Surgical Nursing), Talbot (Chairman, Department of Medical-Surgical Nursing); Assistant Professors Balber (Chairman, Department of Psychiatric Nursing), Marshall, Pitkin, Rost (Director of Continuing Education Bureau), Tukey, Whitney; Instructors Bellone (Chairman, Department of Maternal and Child Health), Edwards, A. Ellis, E. Ellis, Henderson, Karabin (Chairman, Department of Community Health Nursing), MacPherson, Mendlesen, Perry, Pyles (Orono Coordinator of Nursing), Tatro, Tidemann; Lecturers Baldwin, Cox, Curtis, Haas, Hall, Rich

The School of Nursing of the University of Maine Portland-Gorham offers a variety of programs to meet student needs. The four-year undergraduate program leads to the Bachelor of Science degree, with the major in nursing. The School's Bureau of Continuing Education for Nursing offers short-term educational programs for practicing nurses throughout the State of Maine. The School also conducts two certificate, post-professional programs, one for Family Nurse Associates, and one for Pediatric Nurse Associates. The School is part of a consortium with Boston University whereby its graduate courses in nursing are offered on the Portland-Gorham campus.

THE BACCALAUREATE PROGRAM IN NURSING

Upon successful completion of the four-year undergraduate program, the degree of Bachelor of Science, with a major in nursing, is awarded. One hundred and twenty credit hours, with a cumulative point average of 2.0, are required for graduation.

The program is designed to prepare a beginning practitioner who (1) makes relevant, effective responses to the needs of people by providing direct nursing care; (2) demonstrates an ability to coordinate nursing care effectively in various settings; (3) identifies her role as a professional nurse in the community. Nursing is conceived as an art and a developing science concerned with caring and curing. Preparation for professional nursing takes place within the climate of higher education, and builds upon an understanding of man in a bio-social-cultural environment. Excellence in nursing is achieved through the recognition of man's biological, social, and psychological needs, a priority assessment of these needs and effective modes of nursing intervention, and the evaluation of this process.

The first two years of the program consist of courses prerequisite to the clinical courses in nursing, and general education courses required by the University. These two years are offered on three campuses of the University of Maine system: Portland-Gorham, Orono, and Presque Isle. These two years must be completed in full before degree candidates in nursing matriculate for clinical courses in nursing during the junior and senior years on the Portland-Gorham home campus of the School.

Admissions to the undergraduate program are through the Admissions Office of the University, and prospective students should refer to the sections in this catalog on admissions policies required by the University. In addition, the Admissions Office implements the policy of the faculty of the School in that policies shall not eliminate an entire category of people, such as high school students, transfers, registered nurses, adult learners, ethnic or religious groups, veterans, and men. Early application is advised because of limited space.

Advanced placement in the undergraduate program is available in several ways. By taking examinations in the College Level Proficiency, one can secure acceptable credit in some of the general and subject examinations. For details, interested persons should contact the Director of Admissions. Credit by examination can be granted in certain courses at the junior level in nursing after admission to the program, provided prerequisite course requirements are met and permission is granted by the chairman of the department offering the course.

In addition to the required University fees and expenses, students of nursing must purchase uniforms (approximately \$100) during the sophomore year. They must also have the use of a car during the junior and senior years.

REQUIREMENTS FOR THE NURSING MAJOR

The student who matriculates at the Orono campus must attain a cumulative average of 2.0 and a minimum of 63 credits to enter the courses at the junior level of the nursing major.

Achievement of "C" grade or better must be attained in courses cited as specific requirements for the nursing major.

Areas			Credits	
Social Sciences	Py 1	General Psychology	3	
	Py	Elective	3	
	Sy 3	Introd. to Sociology	3	
		Elective — Ay, Pol, Sy, Cf	3	12
Humanities		Fine Arts	6	
		Humanities	6	
	Eh 1	College Composition	3	15
Natural Sciences	Bc 7	Fundamentals of Chemistry	4	
	Bc 8	Elem. Physiological Chem.	4	
	Bio 1	Basic Biology	4	
	Fn 152	Human Nutrition	3	
	Mb 21A	Elem. Microbiology Lab.	1	
	Mb 127	General Microbiology	3	
	Zo 10	Anatomy and Physiology	5	24
	Nsg 1	The Role of the Nurse	3	3
Nursing		Free Electives	7	7
		Physical Education		2
			63	

The junior and senior years include:

Nsg 301/302	Medical-Surgical Nursing	14
Nsg 303/304	Nursing of Mothers and Children	14
Nsg 400	Community Health	3
Nsg 401	Community Health Nursing	6
Nsg 402	Psychiatric Nursing	6
Nsg 403	Advanced Medical-Surgical Nursing	12
Nsg 404	Nursing Seminar	2
		57

COURSE DESCRIPTIONS

nsg 1. The Role of the Nurse — Concepts of nursing and nursing education essential to the understanding of the role of the nurse in today's world. Open to non-nursing students with permission of the instructor. Cr 3.

Nsg 301. Medical-Surgical Nursing — Foundations of nursing care of the adult. Concepts include: health maintenance, stress, basic needs, communication, and the nursing process. Prerequisite: junior standing in the School of Nursing. Cr 7.

Nsg 302. Medical-Surgical Nursing — Nursing care of adults with health problems, present or potential, arising from the normal aging process or a pathophysiological condition. Course parallels Nsg 301. Prerequisite: junior standing in the School of Nursing. Cr 7.

303. Nursing of Mothers and Children — A family centered approach to the nursing needs of parents and children in community care agencies. Emphasis in class and clinical will be on health maintenance. Prerequisite: junior standing in the School of Nursing. Cr 7.

Nsg 304. Nursing of Mothers and Children — A parallel course taken with Nsg 303. A family centered approach to the nursing needs of parents and children with class and clinical emphasis on health restoration. Cr 7.

400. Advanced Medical-Surgical Nursing — Concepts of nursing intervention based on scientific principles. Emphasis is on current trends in clinical nursing and the organizational principles relevant to the leadership role in cooperating the work of others. Prerequisite: Nsg 301, Nsg 302, Nsg 303, Nsg 304. Cr 12.

Nsg 401. Community Health — Concepts and principles basic to the development and maintenance of community health. Emphasis is on the use of epidemiological approach to survey major health issues. Prerequisite: Nsg 301, Nsg 302, Nsg 303 and Nsg 304. Open to non-nursing students by permission of instructor. Cr 3.

Nsg 402. Community Health Nursing — Concepts of community health and the nursing process essential to the practice of nursing in the community. Emphasis is on family-centered

nursing and Health promotion in all classroom and clinical experiences. Prerequisite: Nsg 301, Nsg 302, Nsg 303, and Nsg 304. Cr 6.

Nsg 403. Psychiatric Nursing—The study of psychodynamic concepts and their application to nursing care. Prerequisite: Nsg 301, Nsg 302, and Nsg 304. Cr 6.

Nsg 404. Seminar in Nursing — Current problems and issues of the profession. Prerequisite: Senior standing in School of Nursing. Cr 2.

Nsg 295. Independent Study in Nursing I — Individualized study in an area of nursing with the permission of the instructor. Cr 2-3.

Nsg 395. Independent Study in Nursing II — Individualized study in an area of nursing with the permission of the instructor. Cr 2-3.

Nsg 495. Independent Study in Nursing III — Individualized study in an area of nursing with the permission of the instructor. Cr 2-3.

Fn 352. Human Nutrition — Body metabolism and requirements for nutrients by normal individuals. Prerequisite: Chem 101, Chem 102 or equivalent, and Bio 111. Cr 3.

THE BUREAU OF CONTINUING EDUCATION FOR NURSING

The overall objective of the Bureau is to provide educational programs for nurses in Maine that are designed to (1) stimulate and create an interest in extending their basic education, (2) update their knowledge within specialized areas of nursing care, (3) enhance the leadership capability of nurses, (4) promote better health care to consumers by enhancing the knowledge and skills of the nurse, and (5) create an awareness of the total system of health-care delivery and how their special nursing knowledge and skills can serve imaginatively the health-care delivery system.

The planning and implementation of such programs are based upon identified and projected needs of the learner and society, and are conducted in concert with related health agencies and key advisory people in the State of Maine.

As part of the School of Nursing, the Bureau of Continuing Education for Nursing offers counseling and program guidance to registered nurses interested in pursuing part-time study prior to matriculation into the School of Nursing. Program information may be obtained by contacting Mary Ann Rost, Director, B.C.E.N., University of Maine at Portland-Gorham, Portland campus, 773-2981, Extension 476.

THE FAMILY NURSE ASSOCIATE PROGRAM

The Family Nurse Associate Program is conducted as a non-credit certificate program through the School of Nursing at this University. It is designed to enable the professional nurse to assume an expanded role in providing health care to the family.

The Program has two phases: a six-month pre-phase of directed home study and a subsequent twelve-month period consisting of formal coursework and supervised field experience.

The curriculum is devoted to history-taking, physical examination, simple laboratory procedures, common health problems, public health nursing principles, intensive clinical teaching, and physician-supervised clinical practice in community health facilities.

Program information may be obtained by contacting George L. Pauck, M.D., Program Director, Department of Community Medicine, Maine Medical Center, 22 Bramhall St., Portland, Maine 04102.

GRADUATE EDUCATION IN NURSING

The University of Maine School of Nursing and Boston University School of Nursing have established a consortium whereby Boston University's graduate programs are made available on the Portland-Gorham campus. Interested persons holding the prerequisite baccalaureate degree in nursing may wish to make initial contact with the Dean, School of Nursing, University of Maine at Portland-Gorham campus, 96 Falmouth St., Portland, Maine 04103 — 207-773-2981.

Specific arrangements regarding program are to be made by contacting directly: Dean Evelyn Elwood, Graduate Studies, Boston University School of Nursing, 635 Commonwealth Avenue, Boston, Massachusetts 02215. (tel. 617-353-3445).

THE PEDIATRIC NURSE ASSOCIATE PROGRAM

The Pediatric Nurse Associate Program is conducted at the Maine Medical Center, in conjunction with the School of Nursing at this University.

The admission requirements are that the applicant be a registered nurse, have a defined position upon graduation, and have had previous experience in child care or public health nursing. Preference is given to nurses who will practice in Maine. The course is one year in length, with time approximately equally divided between academic and clinical instruction. Upon satisfactory completion of the course, the Certificate of P.N.A. is awarded by the University of Maine.

Program information may be obtained by contacting George Hallett, M.D., Maine Medical Center, (tel. 207-871-0111), 22 Bramhall St., Portland, Maine 04102.

OCEANOGRAPHY

Associate Professor DeWitt (Acting Chairman); Professors Dean, Dearborn; Associate Professors Fink, Green, Hidu, McAlice, Schnitker, Vadas; Assistant Professor Watling; Lecturers Dugdale, Graham, Hall, Mague, Mazurkiewicz, Morris

Oceanography is an interdisciplinary area of science that is concerned with the study of the air-sea interface, the bottom and margins of the sea, the sea water itself, and the inhabitants of the sea. Because oceanography is not a single science but a combination of sciences, training in oceanography is usually begun at the graduate level—after a student has obtained a degree in a basic science. Students wishing to prepare for graduate work in oceanography should take at least a year each of biology (Bio 1/2 or 4 or Bt 2), chemistry (Ch 13/14), geology (Gy 1/2), and physics (Ps 1a/2a), a course in physical chemistry (Ch 169), and/or thermodynamics (Gy 157), and mathematics through calculus (Ms 28). An understanding of statistics will be helpful.

Except for Professors Dearborn, and Vadas, all faculty of the Department of Oceanography are based at the marine facility, the Ira C. Darling Center for Research, Teaching and Service at Walpole, Maine. While the Department of Oceanography does not maintain an office in Orono at the present time, students wishing to discuss matters concerning programs and career opportunities may arrange appointments with oceanographic faculty members either through the Departments of Geological Sciences, Zoology, or Botany and Plant Pathology.

Persons trained in oceanography may find careers in business, education, industry, federal and state agencies, and research institutions.

Courses in Oceanography (Oc)

150. *Oceanography Today*—An introduction to current areas of research in the ocean, with emphasis on Maine's problems. Rec 3, Cr 3.

IDL 170. (Oc, Zo) *Introduction to Oceanography*—Basic concepts in physical, geological, chemical, and biological oceanography for science majors. Prerequisite: permission. Cr 3.

IDL 175. (Bt, En, Fy, Oc, Zo) *Field Studies in Ecology*—A field trip of one to several weeks to an area of ecologic interest; complete information announced in time for registration each year the course is offered. Trips may be scheduled during holidays. This is an intensive ecology field course; field and living conditions may be primitive. Prerequisite: a course in ecology. Other preparation or recommended prerequisites will be announced for each trip. Credit will vary with the trip.

GRADUATE STUDY IN OCEANOGRAPHY

The department offers work leading to the M.S. and Ph.D. degrees.

A reading proficiency in two foreign languages, ordinarily selected from French, German, Russian or Spanish, is required for the advanced degree. Other requirements are set forth in the Graduate School Catalog.

Specific fields of research include planktology, benthic and polar ecology, aquaculture, marine fishes, phycology, pollution, micropaleontology, paleomagnetism, tectonics, petrology, and chemistry.

Graduate Courses in Oceanography

IDL 201. (Oc, Zo) *Biological Oceanography*—The study of marine organisms and their interrelationships with the chemical, geological, and physical aspects of their environment. Prerequisite: a year of general biology and permission of instructor. Rec 3, Cr 3.

IDL 208. (Oc, Zo) Anatomy and Classification of Fishes—An introduction to the classification of fishes, including fossil forms, and a discussion of those aspects of fish anatomy of most value in systematics. Prerequisite: Zo 133 and/or 136 or permission of instructor. Rec and Lab. Cr 5.

IDL 210. (Oc, Zo) Marine Invertebrate Zoology—Systematics, adaptive-functional anatomy, and life histories of free-living marine invertebrates, excluding protozoans; laboratory emphasis on studies of living material from the local fauna. Numerous field trips required. Prerequisite: Zo 153 or equivalent. Rec 2, Lab 6, Cr 5.

IDL 211. (Oc, Zo) Larval Biology of Marine Invertebrates—Life histories of free-living marine invertebrates, excluding protozoans; emphasis on development, behavior, and ecology of larval forms. Laboratory studies stress methods of procuring, handling, and culturing larvae for descriptive or experimental purposes. Numerous field trips required. Prerequisite: Zo 153 or equivalent. Rec 2, Lab 6, Cr 5.

212. Aquaculture—The history, current advances and status of world commercial techniques of a variety of marine animals, especially mollusks and finfish. Laboratories in aquaculture methods and field trips to commercial aquaculture sites in Maine. Prerequisite: Zo 153 or permission of instructor. Cr 3.

220. Chemical Oceanography—The composition of sea water and processes influencing the distribution of chemical species over the world's oceans through geological time; the routes and rates of material transfer between the ocean, the atmosphere, sediments and the biosphere. Prerequisite: Ms 28, Ps 1/2, plus a course in physical chemistry or chemical thermodynamics such as Ch 169, Gy 157, or equivalent. Rec 3, Cr 3.

241. Physical Oceanography—Physical properties of sea water; waves and tides; distribution of variables, dynamics, water masses and the general circulation. Prerequisite: Ps 1/2, Ms 26. Rec 3, Cr 3.

IDL 260. (Oc, Gy) Marine Geology—Current theories dealing with the origin of the earth as a planet and the development of continents and ocean basins. Morphology and structure of the sea floor. Interpretation of geological and geophysical evidence relevant to the origin and evolution of major tectonic features of ocean regions. Prerequisite: Gy 1/2 and permission of instructor. Rec 3, Cr 3.

IDL 263. (Bt, Oc, Zo) Marine Benthic Ecology—Ecological studies on benthic intertidal and subtidal marine organisms. Discussions on limited factors, distributions, zonation, biotic interactions, food webs, succession, productivity energy, community structure and species diversity. Prerequisite: a course in ecology. Lec 2, Rec 1, Cr 3.

IDL 264. (Oc, Gy) Structure and Tectonics of the Sea Floor—Sea floor crustal structure. The theory and application of geophysical methods employed in studies of the lithosphere. Evaluation of tectonic theories related to origin and evolution of the ocean basins and the development of their major structural features. Prerequisite: Gy 116 and IDL 260 and permission of the instructor. Rec 3, Cr 3.

IDL 266. (Oc, Gy) Micropaleontology—Study of the major groups of microfossils, their biology, morphology, taxonomy; their use in ecologic and stratigraphic interpretation. Prerequisite: Gy 114 or Zo 153 plus Gy 1/2. Rec 3, Lab 2, Cr 4.

IDL 267. (Oc, Gy) Actinopaleontology—Organisms and their relationship to their sedimentary environment. Manifestation of life documented in marine sediments, and of biotopes of sea animals in nearshore marine environments. Course conducted in the form of four full weekend field investigations starting from the Ira C. Darling Center at Walpole. Prerequisite: Gy 1/2; Gy 114 or Zo 153. Cr 2.

IDL 268. (Oc, Gy) Deep Sea Stratigraphy and Paleoceanography—The study of the geologic history of the ocean basins, the oceanic circulation and the climate of the past as recorded in deep seas sediments. Prerequisite: Gy 1/2 and permission. Courses in general biology and oceanography are strongly recommended. Cr 3.

302. Marine Plankton—Systematic ecology and quantitative dynamics of marine plankton, including morphology adaptations, physiology, trophic relationships, and temporal and spatial distribution. Prerequisite: IDL 201, Ms 166 or equivalent. Lec 2, Lab 4, Cr 4.

391. Oceanographic Seminar—Rec 1, Cr 1.

393. Problems in Oceanography—Cr Ar.

399. Graduate Thesis—Cr Ar.

PHYSICS AND ASTRONOMY

Professors Hooper (Chairman), Camp, Carr, Csavinszky, Krueger; Associate Professors Brownstein, Clark, Harmon, Hess, Morrow, Rooney, Smith, Tarr, Vietti; Assistant Professors Carniglia, Verhelst

The department offers major work leading to the degree of bachelor of arts in physics in the College of Arts and Sciences, and also major work leading to the degree of bachelor of science in engineering physics in the College of Engineering and Science.

The following courses should be taken by all candidates for the B.A. degree: Ps 1/2 (or 1a/2a), 18, 36, 117, 153, 155, 172, 176, 198a, 198b, along with Ms 26, 27, 28, and 59.

A minimum of 35 credit hours in physics is required although in special cases a course in another department may be substituted for a physics course. In addition, Ch 13/14 and further courses in mathematics are recommended. Any program of study must be approved by the department.

Prospective physics majors should take Ms 26 and Ms 27 and, if possible, Ps 1/2 (or Ps 1a/2a) in the freshman year. If not prepared for Ms 26, a student should elect Ms 4 and, if taking physics concurrently, should take Ps 1a/2a.

The faculty of the Department of Physics and Astronomy strongly recommends that all candidates for the B.A. degree in Physics complete at least one year of a foreign language at a college or university. Students preparing to attend graduate school in physics should complete the intermediate level of French, German or Russian.

The following courses of the more descriptive variety are open to all students and have no prerequisite: As 9, Ps 3, 3L, 4, 4L, 9, 10, 31. The courses Ps 3, 3L, Ps4 and 4L, and As 9 are classified as survey and introductory courses under the Basic Requirements of the College of Arts and Sciences.

PHYSICS AND COOPERATIVE EDUCATION

Students in good standing enrolled in the Physics curriculum who are completing their second year of undergraduate work have available the option of working for their degree within a Cooperative Education Program. Cooperative Education is the integration of practical work experience, obtained through specific periods of employment in industry, business or government, into the on-campus classroom and laboratory course curriculum. A student in the Cooperative Education program would work as a paid employee in an industrial environment at a job selected by mutual agreement with the student, the employer and the cooperative education coordinator of the Department of Physics. Employment opportunities are available primarily in the State of Maine, but some opportunities exist for work in companies outside of the State.

ASTRONOMY (As)

9. Introduction to Astronomy—A general survey of the field of astronomy designed to provide an appreciation of astronomy from the observational point of view. Concepts will be stressed. No previous background in physics is assumed, and the course is non-mathematical in nature. Lec 3, Cr 3.

14. Navigation—Piloting, dead reckoning and celestial navigation. Prerequisite: trigonometry. Not given every year. Offered under CED. Cr 3.

15/16. General Astronomy—A more complete treatment of the subject than is possible in As 9. Prerequisite: one year of college mathematics. Not given every year. Cr 3.

50/60. Advanced Astronomy—Spherical, trigonometry; determination of latitude and longitude on land and at sea; interplanetary space navigation. Celestial mechanics, artificial satellites, interplanetary flight, the restricted three-body problem, the tidal force, binary star solution. Prerequisite: Ms 27 or permission. Not given every year. Cr 3.

PHYSICS (Ps)**Undergraduate Courses**

1/2. General Physics—The fundamentals of mechanics, matter, sound, heat, electricity, magnetism, and light. The course meets the needs of engineering and science students. Calculus will be used. Corequisite Ms 26. Lec with Dem 2, Rec 1, Lab 3, Cr 4.

1a/2a. General Physics—The fundamentals of mechanics, matter, sound, heat, electricity, magnetism, light and modern physics. Similar to Ps 1/2 but with less emphasis on computations and more emphasis on discussion and graphical methods. Calculus is not used. *Meets the needs of pre dental and premedical students.* Lec with Dem 2, Rec 1, Lab 2, Cr 4.

3. Fundamental Physics—A non-mathematical introduction to basic physical principles for the non-science student. Designed to develop an appreciation for the concepts and applications of physics. Lec with Dem 3, Cr 3.

3L. Fundamental Physics Laboratory—Laboratory exercises to accompany Ps 3 Fundamental Physics. Lab 2, Cr 1.

4. Environmental Physics—A non-mathematical exploration of how physics underlies phenomena in the world around us. Several topics such as: electronics, musical instruments, nuclear reactors, sports, computers, optical instruments, physiology, etc. will be selected for analysis in terms of basic physical principles. Prerequisite: Ps 3 or permission. Lec with Dem 3, Cr 3.

4L. Environmental Physics Laboratory—Laboratory exercises to accompany Ps 4 Environmental Physics. Lab 3, Cr 1.

6. Essentials of Physics—A one-semester general physics course designed primarily for students from the School of Forestry. A condensation of Ps 1/2 accompanied by a careful selection of the topics treated. Lec with Dem 3, Lab with discussion 4, Cr 5.

9. Climatology—A brief introduction to general climatology, treating the elements of climate classification and the resulting modifications to the atmosphere due to human activities. An elementary scientific discussion of the problems of energy conversion and how these problems relate to environmental pollution. No prerequisite. Rec 3, Cr 3.

10. Meteorology—The earth's atmosphere, composition, and movements. Atmospheric conditions accompanying changes in weather, and weather predictions. Air-mass analysis. No prerequisite. Rec 3, Cr 3.

18. Electricity and Magnetism I—Electric and magnetic fields in material media and vacuum. The linear oscillator, both driven and damped, as exemplified by an excited LCR-circuit serves to elucidate the characteristics of linear oscillating systems which play such a central role in physics. Diffraction by a single slit and interference and diffraction by a double slit. Ps 18 is intended to provide the foundation for Ps 155, Electricity and Magnetism II. Prerequisite: Ps 1/2 or 1a/2a. Lec 2, Comp 2, Cr 3.

19, 20. Intermediate Physics Laboratory—Normally taken concurrently with Ps 36, 18 and 172. Prerequisite: Ps 1/2 or 1a/2a. Lab 2, Cr 1.

31. Photography—Fundamental theories and techniques. For the scientist and the amateur. Characteristics and use of various types of cameras, lenses, exposure and exposure meters, emulsions, filters, artificial lighting and copying by contact and projection printing, dark-room practice. Rec 2, Lab 2, Cr 3.

36. Introductory Modern Physics—The basic principles of relativity, quantum theory, atomic structure, nuclear structure, and of a few topics in molecular, solid state and elementary particle physics. Ps 1a/2a or Ps 1/2 or permission. Lec 2, Rec 1, Cr 3.

117. Mechanics—A more advanced treatment of classical mechanics than Ps 1. Topics include: Newton's laws, work-energy theorem, impulse-momentum theorem, particle motion in a plane, linear oscillator, coupled oscillators, rigid body rotation, mechanical waves and potential methods. Prerequisite: Ps 1 (or Ps 1a) and Ms 59 or permission. Lec 2, Comp 2, Cr 3.

153. Electrical Measurements—A laboratory course covering theories and practices in the measurement of electrical and magnetic quantities. Lab 4, Cr 2.

155. Electricity and Magnetism II—An advanced treatment of the fundamental aspects of electrostatics, magnetism, electromagnetic phenomena, direct and alternating currents. Prerequisite: Ps 18 or permission. Rec 3, Cr 3.

157. Biophysics—A one semester course describing motion and configuration of molecules and cells. Topics include: energetic and statistical relationships of cellular and molecular systems, diffusion, active transport, sedimentation, viscosity, osmotic pressure, ion transportation, membrane potentials, electrophoresis, solution optics, ESR, NMR, X-ray analysis, and inter and intramolecular forces. Prerequisites: Ps 1/2, Ms 26, 27 Ch 13/14 or permission. Rec 3 Cr 3.

161. Advanced Meteorology—A more theoretical treatment than Course 10, combined with which the meteorology requirement for government service is satisfied. Not given every year. Rec 3, Cr 3.

162. Heat and Thermodynamics—The laws of thermodynamics. Thermodynamic description of the properties of matter. Rec 3, Cr 3.

163. Statistical and Thermal Physics—The principles and methods of statistical mechanics as a foundation for classical thermodynamics and applications to systems of current interest. Quantum statistics and non-equilibrium theory, as time permits. Prerequisites: Ps 117 and 36. Rec 3, Cr 3.

169. Atomic Physics—Atomic and molecular physics. Includes atomic structure, Xrays, quantum concepts and spectroscopy. Prerequisite: Ps 36 or permission. Rec 3, Cr 3.

170. Nuclear Physics—Basic concepts, radioactivity, nuclear reactions, alpha-beta and gamma-decay. A more specialized course than Ps 169. Rec 2, Cr 3, *If taken with laboratory or Cr 2 if taken without laboratory.*

172. Optics—An introductory study of geometric and physical optics. Rec 3, Cr 3.

174. Physical Optics—A senior level or first year graduate course covering diffraction, polarized light, interferometry and laser theory. Prerequisites: Ps 172 and Ps 155. Lec 2, Lab 3, Cr 3.

176. Physical Measurements—A third-year laboratory course in which experiments are selected from various branches of physics. Lab 4, Cr 2.

181.182. Advanced Laboratory Physics—Selected projects for senior students. Opportunity is given to develop original ideas and to design and construct novel apparatus. Departmental approval required. Lab 6, Cr 3.

193. Topics in Physics—A course primarily for undergraduates dealing with selected topics in areas not already covered by regular course offerings in the department. Given on demand. Cr Ar.

194. Field Experience in Physics — Approved off-campus involvement in the application of physics to research or development in a supervised academic laboratory, government laboratory or industrial environment. Prior approval of department chairman required. Prerequisite: Completion of 16 hours in physics. Cr 1-6.

196. Physics of Materials—Relates the commonly observed macroscopic properties of materials to the microscopic process from which they result. Electrical, magnetic, optical, and mechanical properties will be discussed. Prerequisite: Ps 36, Ps 155 and Ms 59. Rec 3, Cr 3.

198a/198b. Physics Seminar—Oral and written reports on approved topics. Required of all seniors. 198a No credit, 198b Cr 1.

199. Problems in Physics—A thesis project primarily for undergraduates and ordinarily of an experimental nature. Cr Ar (1-3).

Graduate Courses

201. Mechanics—Rec 3, Cr 3.

210.211. Graduate Laboratory—

212. Electrodynamics I—Rec 3, Cr 3.

218.219. Methods of Theoretical Physics—Rec 3, Cr 3.

220. Quantum Mechanics I—Rec 3, Cr 3.

230. Statistical Mechanics—Rec 3, Cr 3.

291. Special Topics in Theoretical or Experimental Physics—Cr Ar.

300. Graduate Seminar—Cr Ar.

307. Nuclear Physics—Rec 3, Cr 3.

309. Physics or Elementary Particles—Rec 3, Cr 3.

313. Electrodynamics II—Rec 3, Cr 3.

315. Spectroscopy at Microwave and Radio Frequencies—Rec 3, Cr 3.

321. Quantum Mechanics II

324/325. Solid State Physics I and II—Rec 3, Cr 3.

326. Semiconductor Theory—Rec 3, Cr 3.

328. Plasma Physics—Rec 3, Cr 3.

399. Graduate Thesis—Cr Ar.

GRADUATE WORK IN PHYSICS

The degrees of master of science and doctor of philosophy are offered in physics. See section on Graduate Study for detailed requirements. Also consult the Graduate School catalog.

SPECIMEN CURRICULA IN PHYSICS

I. The following curriculum is designed for the student who desires a strong background in physics to prepare for graduate work in physics. There are many other possible course arrangements and usually the student will design an individualized program with an adviser from the Department of Physics.

FRESHMAN YEAR		FRESHMAN YEAR	
FALL SEMESTER		SPRING SEMESTER	
	Cr		Cr
Ps 1		Ps 2	
or 1a	General Physics	or 2a	General Physics
Ms 26	Anal. Geom. & Cal.	Ms 27	Anal. Geom. & Cal.
	Electives**		Electives**
	4		4
	4		4
	6		9
	<hr/>		<hr/>
	14		17

SOPHOMORE YEAR					
Ps 19	Intermediate Lab	1	Ps 18	Electricity & Mag. I	3
Ps 36	Intro. Modern Phys.	3	Ps 20	Intermediate Lab	1
Ms 28	Calculus	4	Ps 172	Optics	3
*Chem 13	Chemical Principles	4	*Chem 14	Chemical Principles	4
	Electives	3	Ms 59	Diff. Equations	4
	<hr/>	<hr/>		<hr/>	<hr/>
	15			15	

*Taken in freshman, sophomore or junior year.

JUNIOR YEAR					
Ps 117	Mechanics	3	Ps 155	Electricity & Mag. II	3
Ps 153	Electrical Meas.	2	Ps 176	Physical Meas.	2
Ms 153	Partial Diff. Equat.	3	Ms 154	Partial Diff. Equat.	3
	Electives	6		Electives	6
	<hr/>	<hr/>		<hr/>	<hr/>
	14			14	

SENIOR YEAR					
Ps 198a	Physics Seminar	0	Ps 198b	Physics Seminar	1
Ps 169	Atomic Physics	3	Ps	Physics Elective	3
Ps	Physics Elective	3		Electives**	12
	Electives	9		<hr/>	<hr/>
	<hr/>	<hr/>		16	
	15				

** The student must include among the elective courses those courses needed to satisfy the basic group requirements of the College of Arts and Sciences (except the Mathematics — Natural Science group).

A student preparing for graduate work in physics is advised to take some or all of the following electives in his junior or senior year; Ps 162, Thermodynamics; Ps 163, Statistical Mechanics; Ps 170, Nuclear Physics; Ps 196, Physics of Materials and additional math courses.

II. The following specimen curriculum is designed for those students who desire a degree in physics but who wish greater breadth in background in other areas of science, such as biological, geological, chemical or environmental sciences. The program outlined below enables a student to begin his major in physics during the Sophomore year.

FRESHMAN YEAR

FALL SEMESTER
Electives**, 15 hours

SPRING SEMESTER
Electives, 15 hours

Note: A student might begin his program with Ps 3, Ps 4, Ps 9 or Ps 10 in his freshman year. However, it is advisable to begin Ps 1/2 or Ps 1a/2a and calculus in the freshman year.

Sophomore Year

		Cr		Cr	
Ps 1			Ps 2		
or 1a	General Physics	4	or 2a	General Physics	4
Ms 26	Anal. Geom. & Cal.	4	Ms 27	Anal. Geo. & Cal.	4
	Electives**	9		Electives	9
		<hr/>			<hr/>
		17			17

Junior Year

Ps 36	Intro. to Modern Phys.	3	Ps 18	Electricity & Mag.	3
Ps 19	Intermediate Lab	1	Ps 20	Intermediate Lab	1
Ms 28	Anal. Geom. & Cal.	4	Ps 172	Optics	3
	Electives	6	Ms 59	Diff. Equations	4
		<hr/>		Elective	3
		14			<hr/>
					14

Senior Year

Ps 198a	Physics Seminar	0	Ps 198b	Physics Seminar	1
Ps 153	Electrical Meas.	2	Ps 155	Electricity & Mag. II	3
Ps 117	Mechanics	3	Ps 176	Physical Meas.	2
Ps	Physics Elective	3	Ps	Physics Elective	3
	Electives	6		Electives**	6
		<hr/>			<hr/>
		14			15

** The student must include among the elective courses those courses needed to satisfy the basic group requirements of the College of Arts and Sciences (except the Mathematics — Natural Science group).

PHILOSOPHY (PI)

Professors Hjelm, Skorpen (Chairman), Tredwell, White; Associate Professors Weber, Allen

Philosophy is rigorous reflection on human nature, culture, and the world. It is analytic in clarifying the concepts and methods particular to the humanities and to the sciences. It is synthetic in interpreting the descriptive and evaluative findings of all branches of human inquiry, including its own.

The Humanities Requirement

Any course taken in Philosophy may be used toward fulfilling the Arts and Sciences Humanities Requirement. PI 1, The Ideal of 'Humanitas' from Mythical Image to Modern Philosophy and PI 2, Philosophy and Modern Life, are reserved for freshmen and sophomores.

Other philosophy courses open without prerequisite are PI 3, Methods of Reasoning; PI 4, Problems of Philosophy; PI 5, Introduction to Religious Studies; PI 6, Social Issues in Recent Religious and Philosophical Thought; PI 99, Philosophy of Education; PI 101, History of Greek and Roman Philosophy; PI 111, Ethics; PI 103, History of Modern Philosophy; PI 131, Logic I; PI 161, Introduction to Biblical Thought; PI 162, Religions of the East: Hinduism; PI 163, Religions of the East: Buddhism; PI 164, Western Religion and Philosophy from the 1st to the 16th Century; and PI 167, Religion in America. Any of these courses may serve as an introduction to philosophy and as the first step in meeting the humanities requirement. Other courses in the department carry prerequisites—usually, satisfactory completion of one 100-level philosophy course.

The Philosophy Major

Philosophy majors complete a minimum of 27 hours in philosophy.

Elementary Courses

1. *The Ideal of 'Humanitas' from Mythical Image to Modern Philosophy*—"Humanitas" connotes what human beings are and can become at their best. Course traces the evolution of this ideal through pre-historic, Greek, Renaissance, Enlightenment into current Existentialist stages. Writers from Lorenz to Plato to Kant and others considered. Film presentations such as Clark's "Civilization." Limited to freshmen and sophomores. Cr 3.

2. *Philosophy and Modern Life*—Contemporary works such as Castaneda's "Separate Reality," and B. F. Skinner's "Beyond Freedom and Dignity" comment on issues which have concerned philosophers for centuries. This course brings together such contemporary statements and traditional philosophic texts on problems of existence, knowledge, and conduct. Limited to freshmen and sophomores. Cr 3.

3. *Methods of Reasoning*—Principles used to distinguish correct from incorrect reasoning. Topics include: the nature of thought, uses of language, recognition of arguments, informal fallacies, purposes and types of definition, deduction and induction. Understanding and mastering (through practice) some fundamental techniques for testing the soundness of many different kinds of reasoning—including the student's own. Cr 3.

4. *Problems of Philosophy*—Introduces students to seven basic areas of philosophical concern: the nature of society, art, religion, and history; and the nature of knowledge (epistemology) and the nature of ultimate reality (ontology). Students will study some of the most important discussions on these topics in modern philosophy. Cr 3.

5. *Introduction to Religious Studies*—Religion as an expression of human culture, both past and present. Institutional and non-institutional manifestations of religion as conveyed through myth and symbol, religious experience, struggle for societal change, mysticism, and quests for the articulation of human values. Inquiry by various disciplines will be considered, e.g. psychology, sociology, history, philosophy, and theology. Cr 3.

6. *Social Issues in Recent Religious and Philosophical Thought*—An examination of various philosophical and religious treatments of the most relevant social issues of our time. This course considers analyses of such issues as sexism, racism, imperialism, violence and non-violence, integration and separatism, capitalism and socialism. Cr 3.

History of Philosophy

101. *History of Greek and Roman Philosophy*—Hellenic philosophy with emphasis on Plato and Aristotle, and including Presocratic philosophy, Platonism, Aristotelianism, Stoicism, Epicureanism, and Neo-Platonism. Cr 3.

103. *History of Modern Philosophy*—An interpretation of modern philosophy beginning with Bacon and Descartes at the start of the 17th century, developing through rationalism and empiricism during the 18th, and culminating in the systems of Kant and Hegel early in the 19th. Cr 3.

104. *Recent Philosophy*—Philosophy since World War I. Topics include: logical empiricism and the growth of analytic philosophy; pragmatism; phenomenology and the ontology of Heidegger; the linguistic turn in philosophy; the contemporary critique of empiricism. Prerequisite: Pl 103. Cr 3.

107. *American Philosophy*—A brief examination of colonial and early 19th century American contributions to the development of present-day philosophy. Particular emphasis given to the philosophical views of Royce, Pierce, James, Dewey and Santayana. Prerequisite: one course in philosophy. Cr 3.

121. *Existentialism*—The perennial philosophical questions of human identity, individual purpose, and existential courage. Concepts of despair, alienation, tragic heroism, bad faith, and authenticity, are explored in the writings of such philosophers as Kierkegaard, Nietzsche, Camus, Sartre, Heidegger, and Jaspers. Prerequisite: one course in philosophy. Cr 3.

128. *Philosophical Classics*—An intensive study of the works of a major philosopher or school. This course is conducted in seminar format. May be repeated for credit when different philosophers or problems are studied. Cr 3.

Value Theory

111. *Ethics*—Readings and discussions of works by Mill, Kant, Kierkegaard, Nietzsche, Dewey, and some other systematic moral philosopher. In each case, the nature of the system, its *summum bonum* and defense, will be examined, criticized, and tested for its applicability to personal and public predicaments. Cr 3.

113. *Aesthetics*—Analysis of aesthetic experience and value. Various interpretations, classical and contemporary, of the nature of beauty, feeling, and the arts are studied. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

Logic and Formal Studies

131. *Logic I*—An introductory course in modern symbolic logic. Techniques of deductive inference, including decision procedures and axiomatization, are studied in developing the

propositional and predicative logics. Some attention given to metalogic and the philosophy of logic. Cr 3.

132. Logic II—Advanced topics in symbolic logic. Prerequisite: Pl 131 or permission of instructor.

Philosophy of Science

141. Philosophy of Natural Science—A critical examination of the conceptual and experimental procedures scientists employ in formulating and evaluating their theories. Readings from scientists' writings and from contemporary philosophers of science. Cr 3.

142. Philosophy of Behavioral Science—Conceptualizations of self and society, action and interaction, from philosophy, psychology, and sociology. Explanatory models of human behavior from the behavioristic and linguistic to the phenomenological. Readings are from all such areas of inquiry. Prerequisite: 6 hours in philosophy, behavioral science, or permission of instructor. Cr 3.

Topics in Philosophy

50. Philosophy of Language—The diversity of usage and meaning in ordinary language. A description of a variety of philosophical accounts of the nature of language, the relation between meaning and the use of language, and a consideration of the dimensions of meaning expressible through language. Prerequisite: one course in philosophy or junior, senior standing. Cr 3.

99. Philosophy of Education—Reading such major thinkers as Plato, Rousseau, Whitehead and others. The succession of great educational aims from species survival and social excellence to individual many-sidedness and self-growth which determine educational practices even today. Prerequisite: one-half to one year of study at any of the colleges or permission. Cr 3.

123. Social Philosophy and the Philosophy of Law—Contemporary philosophical accounts of the principles underlying social existence. Examination of the goals, purposes, norms and ideals of social process with special emphasis on the nature of law and its role in society. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

153. Philosophy of History—The problems of historical knowledge, and of major speculative contributions to the interpretation of history. Readings include Hegel, Marx, Spengler, and Toynbee. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

154. Epistemology—Concentrating on the theory of knowledge since Kant, this course examines such topics as: the sense-data theory of the origin of knowledge; the relation of language to theories; the methods by which claims to know are supported or dismissed. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

155. Metaphysics—Traditional and contemporary views on the nature of reality. Historical treatment of representative metaphysicians of the past forms the basis for an examination of the categories and tenets of present-day metaphysics. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

156. Philosophy of Religion—A philosophical study of religion, with emphasis on such topics as revelation and reason, religious language and the Divine existence as they have been dealt with in classical and contemporary thought. Prerequisite: one course in philosophy or permission of instructor. Cr 3.

159. Topics in Philosophy—Individual and small group study of problems or systems of philosophical concern. Course conducted in seminar style and, relying on careful use of major philosophical resources, attempts fresh exploration of fundamental topics. May be repeated for credit when different philosophers or problems are studied. Prerequisite: variable. Cr 3.

199. Readings in Philosophy—Individual study of a selected topic, agreed upon by the student and the instructor. This offering is designed to address advanced issues not covered in normal offerings. Prerequisite: 9 hours and permission of department and instructor. Cr 1-3.

CONCENTRATION IN RELIGIOUS STUDIES

Concentration in religious studies is designed to provide students with the intellectual tools and scholarly background required for a critical understanding of the forms and traditions of religion that have appeared in human culture.

Pl 5, Introduction to Religious Studies, is the recommended introductory course for this field.

Participants in this program of specialization within the Department of Philosophy are required to meet the following requirements:

Courses in the Field of Religious Studies: 21 credits are required for specialization and must include PI 161 (Introduction to Biblical Thought), PI 164 (Western Religion and Philosophy from the 1st to the 16th Century), PI 166 (Contemporary Religious Thought), and one semester of PI 169 (Topics in Religion). The remaining 6 credits may be chosen from the following: PI 6 (Social Issues in Recent Religious and Philosophical Thought), PI 156 (Philosophy of Religion), PI 162 (Religions of the East: Hinduism), PI 163 (Religions of the East: Buddhism), PI 167 (Religion in America), Sy 182 (Sociology of Religion).

Supporting courses in the Field of Religious Studies: 9 credits in courses relevant to the particular interest of the student in religious studies must be selected under the direction of the chairperson of the Department of Philosophy.

160. *The Nature of Religious Experience*—A study of different methodological approaches to religious experience with the primary emphasis upon the phenomenology of religion. A major concern is a description of religious phenomena and an interpretation of their meaning by analyzing the nature of religious symbolism.

161. *Introduction to Biblical Thought*—The historical, literary and theological development of the Biblical tradition from the time of the Hebraic origins to the emergence and expansion of the Christian community. Cr 3.

162. *Religions of the East: Hinduism*—The origins, literature, beliefs and practices of the major religious traditions of India, China and Japan. Emphasis on the Hindu tradition and its developments. Cr 3.

163. *Religions of the East: Buddhism*—Analysis of post-Biblical Judaism in its cultic and theological forms up to the modern developments. The course also surveys the origins and growth of Islam from the 7th century to the present time. Prerequisite: PI 161. Cr 3.

164. *Western Religion and Philosophy from 1st to the 16th Century*—The Jewish and Christian traditions and Greek philosophy from the late Biblical era to the Reformation. Special attention to the late New Testament, the Patristic era, significant philosophical-theological developments of the Middle Ages and the early stages of the Continental Reformation. Cr 3.

166. *Contemporary Religious Thought*—Movements in religious thought from World War I to the present: Buber, Barth, Reinhold Niebuhr, Tillich and Bonhoeffer as they bear on such current movements as the Theologies of Liberation and Hope, Hermeneutics, Jewish Theology, and Religious Atheism. Prerequisite: one course in Religious Thought or Sy 182. Cr 3.

IDL 176 (PI 167, Hy 176) *Religion in America*—The varieties of American religious experience as it has developed in Catholicism, Protestantism, Judaism and selected spiritualist movements. Stress on the diversity of forms which mark recent American religious life, e.g., theological, institutional and artistic. Cr 3.

169. *Topics in Religion*—Individual and small-group study of problems and issues in religious thought. Conducted in seminar style. Detailed examination of topics of present interest to students of religion. Since its content varies from term to term, PI 169 may be repeated for credit. Prerequisite: variable. Cr 3.

POLITICAL SCIENCE (Pol)

Professors Collins, Mawhinney, Schoenberger, Thomson; Associate Professors Clark, Hayes, Horan, Palmer, Shin (Chairman); Assistant Professors Ahn, Bellhouse, Helmke, Sorg, Taylor, Wendzel; Mr. Bancroft, Mrs. Godwin, Mr. Marsters, Mr. Pritchard

Students may major in the following fields: (1) political science, (2) international affairs, or (3) public management.

Specific requirements for majors:

1. Political Science: a minimum of 33 hours of work in the department including Pol. 1: at least six hours within three of the following six sub-areas, with at least one sub-area selected within (a) and one sub-area within (b):

(a) **United States Government**

(1) United States National Institutions

Pol 155; 156; 158; 159; 183/184; 197;* 249
*283.284; *295

(2) Public Administration

Pol 134; 151; 152; 153; 154; *200; *201; *212; *217

- (3) State and Local Government
Pol 3; 7.8; 133; 134; 160; 180; 193; 195; *200; *201

(b) Foreign Governments and Theory

- (1) Comparative Governments
Pol 131; 135; 136; 165; 167; 168; *217;
*231; *237
- (2) International Studies
Pol 21; 22; 173; 174; 177; 187; 188; 196; 199; *273;
*287; Geo 123/124
- (3) Political Theory
pol 10; 12; 182; 189.190; 191; 192; 199; *289; *294

*Graduate courses at the 200-level may be advised for a few senior students.

In addition, a student is required to select one of the following alternatives: (a) Related Areas—General: 12 hours total from at least three related social science fields as follows: anthropology, economics, United States *or* European history, philosophy, psychology, sociology; or (b) Related Areas—Specific: the introductory course plus at least 12 hours in any one of the following fields: anthropology, economics, history, philosophy, psychology, or sociology.

2. International Affairs: see Index.

3. Public Management: a minimum of 33 credit hours, in addition to prerequisites, as described below.

The program is designed to train men and women for public service in municipal and sub-state regional governments. A student is required to serve a summer internship between the junior and senior years. Since the number of internships in the field is limited, the Departmental Public Management Committee will establish a list of candidates according to such factors as university grade point average, performance in the courses of the public management program, and demonstrated interest and initiative in public management.

Prerequisites (for admission to the program)

1. Pol 1 *American Government*
2. Pol 3 *State Government*
3. Ec 10 *Principles of Economics*

Of the 33 credit hour minimum described below, at least 18 credit hours should be in Political Science

A. Skills Component (6 hours)

1. Eh 17 *Advanced Professional Exposition or*
Sh 45 *Discussion and Inquiry or*
Sh 57 *Business and Professional Speaking*
2. Ba 9 *Principles of Accounting I or*
Ms 19 *Principles of Statistical Inference or*
Ms 81 *Computer Programming*

B. Substantive Core (15 hours)

1. Pol 151 *Public Administration*
2. Pol 153 *Administration of Public Personnel*
3. Pol 154 *Public Budgeting and Financial Administration or*
Ec 172 *State and Local Government Finance or*
Ec 144 *Urban Economics*
4. Pol 133 *The American City or*
Sy 126 *Sociology of Urban Life*
5. Pol 134 *Municipal Administration or*
Pol 160 *Problems of State Government*

C. Practical Component (6 hours)

1. Pol 195 *Internship*
2. Pol 198 *Practicum in Municipal Government*

D. Electives (6 hours)

1. Are 136 *Governmental Policies Affecting Rural America*
2. At 19 *Modern Architecture and Design*
3. Ba 10 *Principles of Accounting II*
4. Ce 5 *Surveying*
5. Ce 28 *Highway Engineering Fundamentals*
6. Ce 30 *Transportation Engineering*
7. Ce 31 *Introduction to Sanitary Engineering*
8. Ce 175 *Contemporary Environmental Pollution*

- | | |
|----------------|--------------------------------------|
| 9. Jr 22 | <i>Survey of Mass Communications</i> |
| 10. Pol 7/8 | <i>Maine Government</i> |
| 11. Pol 152. | <i>Administrative Law</i> |
| 12. *Pol 200 | <i>City and Regional Planning</i> |
| 13. *Pol 201 | <i>State Administration</i> |
| 14. Sy 24 | <i>Sociology of Rural Life</i> |
| 15. Sw 150/151 | <i>Social Welfare</i> |

*Graduate courses at the 200-level may be advised for a few senior students.

The department offers two graduate programs, leading to the M.A. degree in Political Science and the Master of Public Administration degree. Students desiring to concentrate in international affairs may do so within the M.A. in political science.

Bureau of Public Administration

Created within the Department of Political Science by the 102nd Maine Legislature, the Bureau of Public Administration is engaged in governmental research and publication and in programs of career development over the state. Political science students are encouraged to use its collections of governmental materials at 162 College Avenue.

Courses in Geography (Geo)

101. Historical Geography of North America—The growth of the American economy studied in its spatial aspect as reflected by urban and rural settlement patterns. Particular attention given to three historical "cross-sections": 1760, 1860, and 1910. Prerequisite: junior standing. Cr 3.

123/124. Political Geography—The geographic and demographic factors that condition national and international politics. Emphasis on the relationships of major nations to their areas and to the world, on examination of their strategic necessities, and on historical reviews of their resultant foreign policies. Cr 3.

150. The Geography of Canada—The analysis of the physical and human elements and their part in producing the distributional patterns of present day Canada. Regional case studies focusing on current problems and future potentialities. Cr 3.

Courses in Political Science (Pol)

1. American Government—An introductory study of the major principles, structures, processes and policies of United States government. The Constitution and its development, civil liberties, federalism, the role of political parties and interest groups, and the nature of the presidency, the bureaucracy, the Congress and the national courts. Cr 3.

3. State Government—State constitutions, structure and functions of state government, relations with federal, state and local governments. Freshmen and sophomores only. Cr 3.

7.8. Maine Government—Practical operations and current problems of state and local government in Maine. One lecture each week by an official, followed by a discussion period. Open to all students. Cr 1.

10. An Introduction to Politics—A study of the scientific development of political science; of such key concepts as power, influence and authority; and of the relationship of politics to such contemporary problems as racism, poverty, threats to the environment, and international conflict. Freshmen and sophomores only. Cr 3.

12. Introduction to Political Ideas—An introduction to concepts and issues found in political discourse. Attention given to contemporary political ideologies, such as communism, fascism, and Democracy. Cr 3.

21.22. Current World Problems—First semester: contemporary international politics, focusing on the factors that condition the choice of foreign policies by the United States and the Soviet Union; reviews, from the point of view of each, their respective policies from World War II until the present. Second semester: contemporary international political problems of the United Kingdom, France, Germany, the Middle East, China and Japan. Cr 3.

131. Introduction to Comparative Politics—The nature, dimensions, and issues in the discipline of comparative politics. Emphasis on relevant theories, basic conceptual tools, analytical skills, and the processes of political development. Prerequisite: Six hours of Political Science. Cr 3.

133. The American City—The process of government in urban America, including concepts of local self-government, forms and procedures in urban governing, and developments in intergovernmental relations and metropolitan areas. Prerequisite: Pol 1. Cr 3.

134. Municipal Administration—The management, financial control and administration of modern American cities; emphasis on personnel and finance administration, the city plan, and line functions: public safety, transportation, health and welfare, housing. Prerequisite: Pol 133. Cr 3.

135. Democratic Governments of Europe—The political traditions, parties, governmental structures, and special political problems of Great Britain, France and West Germany. Prerequisite: Pol 1. Juniors and seniors only. Cr 3.

136. Communist Governments—Marxism-Leninism and the contemporary Communist party, state, economy and society of the Soviet Union. Survey of the satellites. Prerequisite: Pol 1. Juniors and seniors only. Cr 3.

151. Public Administration—The dynamics of governmental administration including administrative principles, decision-making, communication, leadership organizational models and technical, political and personal factors of administration. Prerequisite: Pol 1. Cr 3.

152. Administrative Law—Primarily case studies of the legal adjustment of administrative authority and individual liberty, including: judicial control over administration, personal liability of officers, scope and limits of administrative powers and the due process measurement of administrative procedure. Prerequisite: Pol 151. Cr 3.

153. Administration of Public Personnel—An analysis of the various functions of public personnel administration, including organization and management and the handling of personnel problems relating to public employees at all levels of government. Prerequisite: Pol 151. Cr 3.

154. Public Budgeting and Financial Administration—An analysis of the budgeting process including political aspects. The budget is considered as an instrument of fiscal policy; budget preparation and classification are discussed with special emphasis given to program and performance budgeting. Prerequisite: Pol 151. Juniors and seniors only. Cr 3.

155. Congressional Internship—A first-hand study of the national legislative process and the function of the legislator. The student will be assigned to the staff of a congressman or senator in Washington, D.C., from about February 1 to the end of June. Readings and reports are required in addition to the staff work. Open to juniors and seniors on a competitive basis. Rules announced publicly each fall semester. Cr 9. Students may not receive more than 6 credit hours for internships within the department.

156. Political Parties—Development and present organization and operation of the American party system. Nature and function of major and minor parties, sectionalism, nominating systems, presidential and congressional elections, the electorate, financial groups. Prerequisite: junior standing and Pol 1. Cr 3.

158. Public Opinion—The role of public opinion in American democracy; definition and measurement; sociological and psychological influences; mass media; linkage to government. Prerequisite: junior standing and Pol 1. Cr 3.

159. Problems of American Government—An examination of basic problems of American national government. Case studies in such areas as federalism, the nature of the presidency, congressional organization, civil rights and liberties, the role of the judiciary, and foreign affairs. Prerequisite: Pol 1. Juniors and seniors only. Cr 3.

160. Problems of State Government—An examination of basic problems of American state government. Case studies in such areas as the role of the state in the federal system, the office of the governor, lawmaking, administrative organization, the nature of judiciary, and the future of state government. Prerequisite: sophomore standing and Pol 1. Cr 3.

165. Governments of South Asia—The governments and politics of selected countries of South and Southeast Asia. Emphasis on common problems of emergent nations of the area. Prerequisite: six hours of Political Science. Cr 3.

166. Governments of East Asia—A study of the contemporary political systems of China and Japan. Prerequisite: six hours of Political Science. Cr 3.

167. Emerging Africa—The transition of Ghana, the Congo and other selected areas from colonial to independent states. Attention to political and economic organization and the native culture's impact on government. Prerequisite: six hours of Political Science. Cr 3.

168. Government in Latin America—Concentration of "political styles," the contemporary struggle between tradition and revolution, political elites, economic and political problems. Selected case studies, not necessarily the same each year. Prerequisite: six hours of Political Science. Cr 3.

173. International Relations—The international system of states; the impact of nationalism; the restraints imposed on the unilateral actions of governments; and the possibility of peace

resulting from war, disarmament, functionalism, and diplomacy. Prerequisite: junior standing and six hours of History or Political Science. Cr 3.

174. U.S. Foreign Policy—The formulation and implementation of United States foreign policy. Analysis of such topics as: conceptual framework for study, structures and processes, factors shaping, alternative strategies, and problems. Prerequisite: six hours of Political Science or History. Cr 3.

177. Politics of the Middle east—The politics of the Middle East from World War I to the present. Special attention to problems of Palestine and the creation of Israel, the interplay between the politics of the great powers and Middle East conflicts, and problems of nationalism, modernization, and revolution. Prerequisite: junior standing or permission. Cr 3.

180. Field Experience — Enables a student to participate in a political or governmental organization. Readings and reports required in addition to meetings with faculty sponsor and/or other field experience participants. Prerequisites will be determined in each case based upon the nature of the field experience proposed. Six credit hours maximum for any single field experience registration. Majors within the department may not receive more than a total of 12 credit hours toward graduation for any combination of internships and field experience, and not more than 6 credit hours may be used toward to department major. Prerequisite: junior or senior standing.

182. Introduction to Law—The focus of the course is on the nature and functions of law in the modern world; on law as part of the study of society. Not a technical course in law. Prerequisite: junior or senior standing. Cr 3.

183/184. Constitutional Law—The political, economic and social development of the Constitution through Supreme Court decisions. First semester: cases on the federal system and separation of powers. Second semester: decisions in civil liberties; Bill of Rights and Fourteenth Amendment. Prerequisite: Pol 1. Cr 3.

187. International Law—Introduction to the law that governs relations among states; includes the territory and jurisdiction of states, the law of treaties, recognition of states and governments, the law of the sea, and the law of war. Prerequisite: junior standing and six hours of History or Political Science. Cr 3.

188. International Organization—The nature, historical development, and basic principles of international organization. The structure, operations, and peacekeeping activities of the United Nations are emphasized. Prerequisite: junior standing or permission of instructor. Cr 3.

189.190. Political and Social Thought—A survey of political theories from ancient Greece to the French Revolution. The basic approach is historical, and seeks to relate theories of politics to the environments in which they developed. Prerequisite: junior standing. Cr 3.

191. American Political Ideas—The development of political ideas in America from 1620 to the present. Prerequisite: junior standing. Cr 3.

192. Modern Political and Social Thought—From the French Revolution to the present. Liberalism, utilitarianism, socialism, fascism, communism. Prerequisite: junior standing. Cr 3.

193. State Government Internship—Professional experience in a department or agency of state government. Open to selected students. Reports and readings required. Available under the Maine State Government Internship Program enacted by the 103rd Legislature. Summer Session only, Cr 6. Majors within the department may not receive more than a total of 12 credit hours toward graduation for any combination of internships and field experience, and not more than 6 credit hours may be used toward the departmental major.

195. Municipal Government Internship—Professional experience in local government. Reports and readings required. Required for B.A. in Public Management. Cr 6. Majors within the department may not receive more than a total of 12 credit hours toward graduation for any combination of internships and field experiences, and not more than 6 credit hours may be used toward the departmental major.

196. International Affairs Internship—Study during the summer in a government agency, an international organization, or a business with overseas operations. Readings, reports, and on-the-job training required. Open to junior or senior International Affairs majors. Cr 3. Students may not receive more than 6 credit hours for internships within the department.

197. Scope of Political Science—The scope and nature of the study of politics: power and society; basic descriptive political theory and the role of political institutions. Prerequisite: Open to senior Political Science majors or with permission. Cr 3.

198. *Practicum in Municipal Government*—Lectures by visiting municipal, regional, state and federal officials on a series of topics and problems which will face the public administrator in his position; supplemented by the instructor and reading assignments. Required of Public Management majors. Prerequisite: Public Management senior or permission of instructor. Cr 3.

199. *Theory and Methodology of International Relations*—Traditional and current theories of international politics and the application of such theories to specific situations. Emphasis on such approaches as systems analysis, game theory, decision-making, simulation, and the development of theoretical models. Prerequisite: Pol 173 or permission. Cr 3.

Graduate Courses

200. *City and Regional Planning*—Cr 3.
 201. *State Administration*—Cr 3.
 205. *Political Man and His Milieu*—Cr 3.
 206. *State Politics in the United States*—Cr 3.
 207. *Local and Regional Government and Politics*—Cr 3.
 212. *Electronic Data Processing in Public Administration*—Cr 3.
 217. *Comparative Administrative Systems*—Cr 3.
 231. *Topics in Comparative Politics*—Cr 3.
 237. *The Evolution and Development of Canadian Government and Politics*—Cr 3. (IDL 237 or Hy 237)
 249. *Seminar in American Politics*—Cr 3.
 273. *Problems in International Politics*—Cr 3.
 283.284. *American Constitutional Development*—Cr 3.
 287. *Problems in International Law*—Cr 3.
 289. *Topics in the History of Political Philosophy*—Cr 3.
 294. *Topics in Political Theory*—Cr 3.
 295. *Methods of Political Science*—Cr 3.
 297.298. *Seminar*—Cr 3.
 302. *Topics in Public Administration*—Cr Ar.
 303. *Topics in International Relations*—Cr Ar.
 310. *Administrative Theory*—Cr 3.
 311. *Program Analysis and Evaluation*—Cr 3.
 320. *Urban Regional Government*—Cr 3.
 325. *Planning and Organization for Economic and Social Development*—Cr 3.
 327. *Intergovernmental Relations*—Cr 3.
 331. *Seminar in Comparative Politics*—Cr 3.
 333. *Community Political Power Structures*—Cr 3.
 350. *Independent Readings*—Cr Ar.
 397. *Method Seminar in Public Administration*—Cr 3.
 398. *Project Seminar in Public Administration*—Cr 3.
 399. *Graduate Thesis*—Cr Ar.
193. (State), 195. (Municipal) *Internships* — Professional experience in either a local government unit or a department or agency of state government. Open to selected students. Reports and readings required. State government option available under the Maine State Government Internship Program enacted by the 103rd Legislature; Municipal Government Internship Program enacted by the 103rd Legislature; Municipal Government option required for the B.A. degree in Public Management. Cr 3 or 6 hrs. Students may not receive more than 6 credit hours for internships within the department.

PSYCHOLOGY (Py)

Professors Antonitis, Haaland, Hammer, Kaplan, Pliskoff, Ryckman, Stone, Stubbs, Wade; Associate Professors Abelson, Farthing, Frey (Chairman), Gold, Kulberg, Magaro, Martindale, Wilkins; Assistant Professors Gershman, Hayes, Lenney; Cooperating Associate Professors Butler, Grant, Vitro; Cooperating Assistant Professors Hess, Thorpe; Lecturers Balian, Levinson, Sanders; Faculty Associate Booth; Head Teacher (Child Study Center) Gorham

The instruction offered by the Department of Psychology is designed to acquaint the student with psychology as a biological science and as a social science. The department provides the student with training in the facts of psychology, psychological theory and methodology, as well as in the application of psychology.

The requirement for a major in the department is a minimum of 27 hours, which must include Py 1, Py 141, Py 145, and Py 191. The faculty recommends that students majoring in psychology take no more than 32-36 hours in psychology. The purpose of this recommendation is to encourage students to study related areas and to broaden the scope of their education. Students intending to major in psychology should plan the courses they wish to take with this maximum in mind. The student's adviser serves to aid him/her in making these choices.

For ease of reference, the course offerings of the Department of Psychology have been categorized. A brief description of each category precedes it. These descriptions are meant to provide the student with information that may be of importance in decisions about the psychology courses that will be of most benefit to his/her program.

General Psychology Background(1-99)

This category consists of Py 1, General Psychology, *which is a prerequisite for all advanced courses in the department* and, hence, is required for the psychology major.

1. General Psychology—A survey of psychology as the science of behavior. Lecture discussions of basic psychological processes, including learning, perception, motivation and emotion, higher mental processes, individual differences, personality and additional selected topics. Participation in research to a maximum of 3 hours is expected. Cr 3.

Topics in Psychology (100-119)

This category includes courses that are of interest both to students who are majoring in psychology and students who are majoring in other fields. Py 1 is a prerequisite for all courses in this category.

101. Cognition—An introduction to the psychological study of thinking, attention, and language. Representative topics include fantasy, altered states of consciousness, psycholinguistics, and creativity. Cr 3.

102. Psychology of Literature—Psychological approaches to the study of art and literature. Psychoanalytic and Marxist theories, experimental aesthetics, investigations of literary change, and the application of the methodology of the behavioral sciences to the study of literary phenomena. Cr 3.

103. Applications of Behavior Principles—Methods employed in the experimental analysis of behavior; principles of respondent (classical) and operant (instrumental) conditioning; applications of principles to the understanding and control of behavior in everyday life situations. Cr 3.

107. Animal Behavior—Several topics in comparative animal psychology, including learning, motivation, sensory processes, behavior genetics, innate behavior, social behavior, and the development of behavior. Various methods of investigating and classifying animal behavior are critically evaluated. Prerequisite: Zo 3 or permission. Cr 3.

108. Theories of Personality—The chief contemporary approaches to the study of personality. Critical issues in personality are covered, in addition to a consideration of assessment techniques and research methods. Cr 3.

110. Mental Hygiene—A discussion of the basic principles of mental health; also is designed to enhance the personal growth and mental health of the student. Mental health exercises and open-group discussions utilized to help the student come to better understand himself and to learn to communicate with others more meaningfully. Cr 3.

112. Abnormal Psychology—The origin, development, and manifestations of the psychoneuroses and major psychoses with a view to a better understanding of deviant behavior in our society; emphasis on the biological, social, and psychological determinants of deviant behavior. Cr 3.

115. *Culture Determined By Personality*—An examination of the effects of personality on the formation of cultural institutions. Readings will focus on analyses of society in terms of personality patterns of the dominant social movements. Cr 3.

Developmental Psychology Courses (120-129)

This category contains courses intended to introduce the student to the various subdisciplines of developmental psychology. In addition, it contains courses intended to provide students who plan to enter vocations focusing on children with a specialized background for that work. Occasionally, one division of Py 123 will be limited to psychology majors and students who have a good background in psychology. It is recommended that qualified students enroll in that division, rather than one of the others. Py 1 is a prerequisite for all courses in this category.

120.121. *Child Study Laboratory*—Observation and study of a group of pre-school children. Individual projects, supplemented by reading and class discussions. Opportunity to assist in guiding the children's activities. It is recommended that the student take Py 123 before enrolling in Py 120.121. Rec 2, Lab 3, Cr 3.

123. *Psychology of Childhood*—A systematic study of the child's behavior and psychological development. Emphasis upon principles underlying development, methods of child study, and practical implications. Cr 3.

124. *Psychology of Adolescence*—Adolescent development in the physical, intellectual, emotional, and social spheres. Adolescent personality and problems of adjustment in relation to the family, the school and the community, and the world of work. Delinquency and abnormality in adolescents. Cr 3.

125. *Educational Psychology*—The underlying psychological principles useful to the educator: understanding individual differences in development; personality; intelligence; principles of effective learning; interpretation of standardized tests. Cr 3.

126. *Psychology of the Retarded Child*—Description and analysis of various types and levels of retardation and study of causative factors. Psychological principles and techniques applicable to the identification, care, and training of retarded children. Prerequisite: Py 123 or permission. Cr 3.

127. *Psychology of the Superior Child*—Identification, development, and behavioral characteristics of superior children. Discussion of social and psychological problems associated with the superior child. Prerequisite: Py 123 or permission. Cr 3.

128. *Psychology of the Exceptional Child*—The development and behavior of the exceptional child. Special emphasis on the practical problems related to the management of children with intellectual, emotional, orthopedic, sensory, and academic handicaps. Prerequisite: Py 123 or permission. Cr 3.

129. *Learning in the Classroom*—The basic phenomena and principles involved in understanding and managing the learning process in the classroom from subprimary through the college level. Cr 3.

Social Psychology Courses (130-139)

This category contains courses intended to introduce the student to the various subdisciplines of social psychology. In addition, it contains courses intended to provide students with theory and research in several areas of current professional interest. Occasionally, one division of Py 130 will be limited to psychology majors and students who have a good background in psychology. It is recommended that qualified students enroll in that division, rather than one of the others. Py 1 is a prerequisite for all courses in this category.

130. *Social Psychology*—An introduction to the study of social behavior from a psychological perspective. Representative topics include culture and personality, attitude formation and change, conformity, leadership and prejudice. Cr 3.

131. *Social Psychology and Problems in Contemporary Society*—An application of social psychological principles to major problems confronting contemporary American society. Problems under consideration may include institutional racism, international conflict, poverty and overpopulation. Cr 3.

139. *Psychology of Political Behavior*—Application of social-psychological principles to the study of political behavior. Political socialization, motivation for participation, political attitudes, and personality factors related to political roles. Prerequisite: Py 130 or permission. Cr 3.

Core Psychological Methodology Courses

This category includes courses which are crucial to students' understanding of psychology as a science. Py 141 (Statistics in Psychology I) and Py 145 (Principles of Psychological Research) are required for the psychology major. Students who have any intention of pursuing graduate study in psychology or a related field should be especially concerned with this category of courses and should probably take all of them. In terms of prerequisites, the sequence would be Py 141, Py 145, Py 142. A minimum grade of B in these courses is indicative of ability to do graduate work. Py 1 is a prerequisite for all courses in this category.

141. Statistics in Psychology I—a survey of techniques used to obtain, display, analyze, and interpret data in psychology. Cr 3.

142. Statistics in Psychology II—A consideration of techniques of practical value to the psychologist in analyzing psychological experiments. Prerequisite: Py 141 and Py 145. Cr 3.

145. Principles of Psychological Research—Techniques of psychological research. Applications of general methodology and specific techniques to major problem areas in behavioral research. Prerequisite: Py 141. Lec 3, Rec 1, Cr 4.

General Experimental Psychology (150-170)

This category includes courses intended to introduce students to basic psychological theory and research. Students who plan to pursue graduate study in psychology should take several of these courses. Py 1 is a prerequisite for all of the courses in this category.

151. Psychology of Motivation—A survey of theory, research methodology and experimentally obtained facts related to the activation and direction of behavior. Cr 3.

154. Learning and Motivation—Fundamental principles of classical conditioning and operant conditioning, including interrelations between learning and motivation. Research data discussed in relation to various theories of learning. Laboratory work emphasizes demonstrations of fundamental learning phenomena in animal subjects. Prerequisite: Py 145. Lec 3, Lab 2, Cr 4.

155. Human Learning—Basic principles that underlie the discovery, fixation and retention of new modes of human behavior. Verbal learning, retention, transfer of learning, and concept formation. Py 145 is recommended before Py 155. Lec 3, Lab 2, Cr 4.

156. Theories of Learning—The most important psychological theories concerning the nature of the learning process, including the behavioristic positions (Guthrie, Skinner, the Hullian group, Estes) and Gestalt positions (Lewin, Tolman). Cr 3.

161. Sensation and Perception—A systematic examination of selected sensory and perceptual processes. Emphasis on experimental method, research findings and theoretical interpretations. Prerequisite Py 145 or permission. Lec 3, Lab 2, Cr 4.

165. Physiological Psychology—Physiological bases of behavior with emphasis upon the development and function of the nervous system and the sense organs; the relation between psychological processes and psychological activity. Prerequisite: a basic course in zoology; Py 145 is recommended. Cr 3.

Advanced Undergraduate Psychology Courses (190-199)

This category contains courses which are generally reserved for upper-level psychology majors, although some of these courses may be of interest to students in related fields. Py 191 (History and Systems of Psychology) is required for the psychology major. Py 190 (Problems in Psychology) affords students an opportunity to pursue psychological research in conjunction with one or more faculty members. Students who plan to apply for graduate study should attempt to get involved in research if possible. *Only 6 hours of Py 190 credit will count toward the psychology major.* Py 1 is a prerequisite for all courses in this category.

190. Problems in Psychology—Opportunity to carry out a particular research problem under supervision. Students *must* file a special form for this course during the first week of the semester; the form may be obtained in the Department office. Only 6 hours of credit in Py 190 will count toward the psychology major. Py 145 and permission. Cr Ar.

191. History and Systems of Psychology—Course covers the history of psychology from prehistoric times to British Associationism and Scottish Faculty Psychology to 19th century physiology and the modern development of psychology. Course open to upper juniors and seniors only and is required for all majors in psychology. Cr 3.

194. Seminar in Issues in Contemporary Psychology—A review of some of the current theoretical issues and research findings in the general areas of psychology. Seniors only. Cr 3.

Graduate Psychology Courses (200-399)

Courses numbered 200-299 are not limited to graduate students. These courses are open to both undergraduate and graduate students. Junior and/or senior psychology majors are encouraged to enroll in some of these courses (especially 222, 224, 234, 238, 257, and 261) if possible. Undergraduates do not necessarily compete with graduate students for grades in such courses. Undergraduates require permission of the instructor to register for 200 level courses.

- 222. *Advanced Child Psychology*—Cr 3.
- 224. *Experimental Child Psychology*—Cr 4.
- 234. *Advanced Psychopathology*—Cr 3.
- 238. *Research in Personality*—Cr 3.
- 242. *Psychological Methodology*—Cr 3.
- 243. *Correlation Techniques*—Cr 3.
- 244. *Psychological Test Theory*—Cr 3.
- 245. *Nonparametric Techniques in Psychology*—Cr 3.
- 247. *Introduction to Factor Analysis*—Cr 3.
- 251. *Advanced Physiological Psychology*—Cr 4.
- 257. *Controversial Issues in Learning*—Cr 3.
- 258. *Advanced Theories of Learning* — Cr 3.
- 259. *Advanced Experimental Analysis of Behavior and Its Application*—Cr 3.
- 261. *Advanced Social Psychology*—Cr 3.
- 263. *Group Processes*—Cr 3.
- 265. *Attitudes and Opinions*—Cr 3.
- 267. *Advanced Cognitive Psychology* — Cr 3.
- 303. *Ethics and Professional Problems*—Cr 1.
- 311. *Scientific Inquiry in Psychology*—Cr 3.
- 312. *Advanced Experimental Psychology*—Cr 3.
- 315. *Advanced Experimental Design*—Cr 3.
- 317. *Experimental Social Psychology*—Cr 3.
- 321. *Individual Psychological Testing*—Cr 4.
- 325. *Basic Methods in Assessment*—Cr 3.
- 326. *Advanced Clinical Assessment*—Cr 3.
- 327. *Clinical Interviewing*—Cr 3.
- 328. *Consultation*—Cr 3.
- 330. *Practicum (activity)*—Cr Ar.
- 341. *Personality*—Cr 3.
- 342. *Theories of Psychopathology*—Cr 3.
- 343. *Seminar in Clinical Psychology*—Cr 3.
- 344. *Research in Clinical Psychology-Schizophrenic*—Cr 3.
- 347. *Seminar in School Psychology*—Cr 3.
- 351. *Child Psychopathology*—Cr 3.
- 355. *Seminar in Psychotherapy*—Cr 3.
- 357. *Case Studies in Psychotherapy*—Cr 3.
- 358. *Seminar in Behavior Therapy*—Cr 3.
- 361. *Seminar in History and Systems of Psychology*—Cr 3.
- 362. *Seminar in Physiological Psychology*—Cr 3.
- 363. *Seminar in Learning*—Cr 3.
- 364. *Seminar in Motivation*—Cr 3.
- 365. *Seminar in Perception*—Cr 3.
- 366. *Seminar in Social Psychology*—Cr 3.
- 367. *Seminar in Cognitive Psychology* — Cr 3.
- 371. *Topics in Child Psychology*—Cr 3.

372. *Topics in Comparative Animal Behavior*—Cr 3.
 373. *Topics in Physiological Psychology*—Cr 3.
 374. *Topics in Learning*—Cr 3.
 375. *Topics in Sensation and Perception*—Cr 3.
 376. *Topics in Quantitative Methods in Psychology*—Cr 3.
 377. *Topics in Clinical Psychology*—Cr 3.
 390. *Directed Research: (area)*—Cr not to exceed 6.
 392. *Directed Readings*—Cr not to exceed 6.
 399. *Graduate Thesis*—Cr Ar.

INSTITUTE FOR QUATERNARY STUDIES

Professor Harold W. Borns, Jr. (Director)—Quaternary and Glacial Geology; Associate Professor Ronald B. Davis—Paleoecology-Limnology; Associate Professor George H. Denton—Quaternary and Glacial Geology; Associate Professor Terence J. Hughes—Glaciology; Associate Professor David Sanger—Archaeology; Associate Professor Detmar Schnitker—Marine Geology—Micropaleontology; Assistant Professor Wibjörn Karlén—Quaternary and Glacial Geology; Visiting Associate Professor Robert H. Thomas—Glaciology; Faculty Associate—Thomas B. Kellogg—Marine Paleoclimatology and Sedimentation; Faculty Associate Davida E. Kellogg—Marine Microbiologist and Ecologist; Faculty Associate Robert Stuckenrath—Radiocarbon Dating

The Quaternary Period, the most recent in earth history, witnessed numerous climatic fluctuations, glaciations, sea-level changes, and shifts in distributions of organisms. These changes shaped our contemporary environments and strongly influenced the evolution of man. A knowledge of Quaternary events facilitates understanding of current environmental changes and may enable anticipation of future changes. Maine was particularly affected by Quaternary events, because its landscape was shaped largely by glaciation and its biota was influenced strongly by climatic change.

Quaternary studies are often interdisciplinary and thus require cooperation among several academic departments. To facilitate such cooperation an Institute for Quaternary Studies, dedicated to teaching and research, has been established at the University of Maine at Orono. The Institute is staffed by members of the Departments of Anthropology, Botany and Plant Pathology, Geological Sciences and Oceanography. The Institute is not a formal academic department. Rather, it serves to organize and promote interdepartmental teaching and research related to Quaternary studies.

Academically, the main purpose of the Institute is to offer a master of science in Quaternary studies degree.

Research interests of staff members focus on historically oriented problems of the Quaternary. These research interests overlap and complement each other to a degree which insures cooperation and encourages interdisciplinary approaches and joint research projects. Graduate students may pursue interdisciplinary thesis projects and may be supervised jointly by several staff members. Although much Institute research is conducted in New England and adjacent Canada, projects are also current in Alaska, Yukon Territory, Lapland, northwestern Europe, and Antarctica.

QUATERNARY SETTING OF MAINE

Ice sheets covered Maine repeatedly during the Quaternary. Drift deposited by the last ice sheet, which withdrew from Maine 12,000 to 14,000 years ago, is particularly well preserved. The coastal region displays widespread marine sediments, extensive systems of large stratified moraines, small washboard moraines, and raised deltas and strandlines. Eskers, ice-disintegration deposits composed of till, fluted till sheets, ice-contact stratified drift, outwash, and periglacial features characterize the inland landscape. In addition, the Longfellow Mountains in northwestern Maine contain numerous cirques and other features of glacial erosion. A well-dated framework of Quaternary events in Maine provides a base for detailed studies of glacial and periglacial deposits, glacial and postglacial events, and sea-level changes.

Maine's numerous lakes and bogs afford widespread opportunities for research in Quaternary paleoecology. Fossils in lake sediments record ecologic changes since the last glaciation. The earliest terrestrial vegetation included a high proportion of tundra plants. As the climate became warmer, the vegetation was characterized first by closed forests of spruce and pine and later by more southern trees such as hickory. Climatic cooling during the most recent 3000 years has offered competitive advantage to northern forms. Present-day isolated populations of *Rhododendron maximum* and the marine sponge, *Microciona prolifera*, probably are vestiges of the earlier warm period, whereas arctic species on high mountains and along the coast probably have survived in special environments in Maine since late-glacial time.

Prehistoric remains in Maine are largely unstudied and research opportunities in archaeology span all periods in a variety of ecological systems. The earliest cultural record consists of scattered surface finds of Paleo-Indian fluted points which probably date to at least 10,500 years ago. The lengthy Archaic stage is best known from cemeteries of the Laurentian tradition which are located both in coastal and interior environments. Late Archaic remains are common along the coast and apparently represent the beginning of an intensive maritime exploitation pattern which was dependent largely on shellfish. Current research involves excavation and analysis of habitation sites in order to define the range of settlement and subsistence patterns. In several research projects Quaternary specialists are cooperating to provide environmental data pertinent to the prehistory of Maine.

GRADUATE AND UNDERGRADUATE PROGRAMS

A Master of Science in Quaternary Studies

This program is designed to provide a student with a concentrated training in the archaeology, biology, or geology of the Quaternary Period (the most recent period of geological time involving the last 2.5 million years) and in addition to provide an appreciation of the interaction of these fields toward the end of better understanding Quaternary paleoclimatology, paleoecology, and prehistoric archaeology.

The course structure designed by the institute offers undergraduate students a unique opportunity to obtain a strong interdisciplinary base from which to pursue graduate work in fields related to Quaternary studies. Interested and qualified upperclass undergraduate students may enroll in most of the courses listed below and thus may accumulate a minor concentration of Quaternary courses.

Courses in Quaternary Studies

- Seminar in Quaternary Studies
- Glacial Geology
- Quaternary Environments and Climatic Change
- Quaternary of the Northeast
- Glaciology
- Directed Study in Quaternary Geology
- Lake Ecology and Productivity
- Quaternary Paleoecology and Pollen Analysis
- Introduction to Archaeology
- Old World Prehistory
- North American Prehistory
- Field Research in Archaeology
- Radiocarbon Dating
- Quaternary History of the Ocean Basins

FINANCIAL ASSISTANCE AND ADMISSION

Application forms and information on graduate fellowships and traineeships may be obtained from:

Acting Dean Roderick A. Forsgren
Office of the Graduate School
University of Maine at Orono
Orono, Maine 04473

Information on graduate teaching and research assistantships and further information about graduate and undergraduate programs in Quaternary studies may be obtained from:

Dr. Harold W. Borns, Jr.
Institute for Quaternary Studies
University of Maine at Orono
Orono, Maine 04473

Undergraduate application forms for admission to the University of Maine at Orono may be obtained from:

Mr. James A. Harmon
Director of Admissions
Alumni Hall
University of Maine
Orono, Maine 04473

SOCIOLOGY (Sy)

Associate Professor Guptill (Chairman); Professor Maccoby^{*}; Associate Professor Fenn; Assistant Professors Cohn, Gallagher, Karush, Markides, Marks[†], Watkins, Zicklin; Lecturer Michelle Walker[‡]

The Department of Sociology offers courses designed to further the student's perception and understanding of society through the study of major social institutions, social structures, social processes, and social behaviors. The department also offers a set of elective courses in social welfare as an option for students interested in pursuing a career in social work. Students completing the social welfare option will have a special notation on their transcript records stating that they have satisfactorily completed the social welfare course work in addition to the major requirements in sociology.

Students who wish to explore the requirements for graduate study, or professional careers in sociology, or in social welfare, should consult with the departmental secretary who will direct them to an appropriate adviser.

^{*}On Leave Fall Semester 1976

[†]On Leave 1976-77

[‡]1976-1977 Academic Year

Requirements for Majors

The student who majors in the department must complete satisfactorily a minimum of 36 hours of departmental course work, of which at least 9 hours must be in *electives* bearing numbered designations of 140 or higher. (Required courses do not apply to this 9 hour minimum, nor do courses listed as Sy 197, 198, unless otherwise specified in the catalog.)

The following courses are required of all departmental majors:

- | | |
|------------------|---|
| Sy 3. | Introduction to Sociology |
| Sy 110. | Social Organization |
| [*] or | |
| Sy 160. | Major Ideas in Sociology |
| Sy 190. | Logic of Sociological Inquiry |
| Sy 191. | Practicum in Sociological Research |
| ^{**} or | |
| Sy 193. | Practicum in Experimental Research |
| Eh 7. | Advanced Composition—Expository Writing |

(The department will waive the requirement in Eh 7 for the student who demonstrates satisfactory achievement in expository writing. Credit for this course does not apply towards the 36-hour minimum in sociology. For further information, see the departmental secretary by March 1 of the academic year in which you propose to declare as a departmental major.)

^{*}If both courses are taken, Sy 160 may count above the 140 level.

^{**}If both courses are taken, one may count above the 140 level.

Departmental majors taking the social welfare option are required additionally to complete the following courses which also satisfy for them the requirement for a minimum of 9 hours of electives in departmental courses numbered 140 or higher.

- Sw 150. Social Welfare as an Institution
- Sw 151. Social Work as a Profession
- Sw 152. Social Work Methods I
- Sw 153. Social Work Methods II
- Sw 154. Field Experience in Social Work I
- Sw 155. Field Experience in Social Work II

It is suggested that students take Sw 150 and Sw 151 during the sophomore or junior year and Sw 152 and Sw 153 during the senior year. Field Experience in Social Work (Sw 154 and Sw 155) is open to senior social welfare option students only.

The two semesters of field experience are required in order to show completion of the social welfare option on the transcript. Students are placed in various community agencies for one day a week under the supervision of qualified social work practitioners. A weekly seminar on campus enables students to share and synthesize the field experience with fellow students.

The department encourages all prospective majors in the department to complete 9 hours of sociology in their freshman and sophomore years (including Sy 3 and Sy 110 or Sy 160), as well as Eh 7.

Sociology (Sy)

3. Introduction to Sociology—The fundamental concepts, principles, and methods of sociology; analyzes the influence of social and cultural factors upon human behavior; evaluates effect of group processes, social classes, stratification, and basic institutions on contemporary society. Cr 3.

4. Social Problems—Introduction to the structure of inequality in American society and the consequences for community and democracy. Economic inequality, the issue of poverty, social inequality and social stigma, the connections between wealth and power, societal priorities. Prerequisite: Sy 3 or permission of instructor. Cr 3.

20. Sociology Through Literature — The purpose of this course is to allow students with little or no background in sociology to work with and apply basic sociological concepts and theories. This purpose will be accomplished through reading several novels and applying them to the material in an introductory text. In this way some of the abstract ideas of sociology should become more "real" to the student. No prerequisite. Will not count toward sociology major requirements. Cr 3.

IDL 24 (ARE, Sy). Sociology of Rural Life—Significance of rural society in American culture. The impact of forces of change, including population movement. The significance of changes in the social systems of communities, family, religion, education, and stratification. Cr 3.

80. The Sociology of Violence, Terrorism, and Assassination — The nature and causes of violence, terror and assassination in American, modern and pre-modern societies. The social structure of terrorist organizations. The institutionalization of terror as an instrument of policy by national states. No prerequisite. Will not count toward sociology major requirements. Cr 3.

85. Death and Society — The study of death as a source of insights and theories concerning the relationship of society to the individual. The student will be introduced to functionalist and psychoanalytic perspectives on death in the work of Durkheim, Malinowski, Geertz, Parsons, Brown, and Marcuse. The course will examine killing and suicide, games and festivals, ecstatic movements, memorials, and contact with the dead in American society. No prerequisite. Will not count toward sociology major requirements. Cr 3.

110. Social Organization—An analysis of the nature of social order within society. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

111. Religion and American Society—Contemporary religious phenomena will be interpreted as expressions of conflict and consensus in American society. Religious dimensions of individual life-styles, established and deviant therapies, social protest, popular culture, and national ideology. Disorder and renewal in established churches; alienation and emerging cults. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

112. Political Sociology—The application of sociological conceptual frameworks and theories in the interpretation and explanation of political phenomena like voting behavior, power systems, and political processes. An introduction to the literature and issues of political sociology. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

113. *Deviant Behavior*—Behavior defined by society as deviant. The processes by which an act or actor becomes defined as deviant and the nature of occupying a deviant role. The "techniques" of deviance and the acquisition of a deviant self concept. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

115. *Sociology of Youth* — The way in which American society socializes its young people and the roots of generational conflict. The development of youth culture, political confrontation, social control of identity-formation, socialization functions of schools, delinquency as a response to class society. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

116. *Sociology of Aging*—Analysis of the demographic and sociocultural factors in aging, the aging individual as a person, older people as groups and aggregates within the culture and structure of a changing society, the manner in which society attempts to meet the needs of aging people, and the aged. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

118. *Sociology of the Family*—A sociological approach to the study of the family, including the structure of social relationships, the modern American family as a social institution, the cultural background of the family, and the impact of social change. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

119. *Introduction to Statistical Research in Sociology* — Introduction to how statistical methods are utilized in sociological research. Topics include: the measurement of social variables; the presentation and description of both quantitative and qualitative data. Descriptive statistics. Introduction to probability theory and its applications. Statistical measurement of association. Sampling, parameter estimation, hypothesis testing. Prerequisite: Sy 3 or permission of instructor. Cr 3.

IDL 124. (ARE, Sy). *Contemporary Rural Problems*—A problem-oriented, class participation course focusing on the trends taking place in contemporary rural society. Includes rural population displacement and mobility, poverty, industrialization; consequent changes in occupational composition, and related changes. Prerequisite: IDL 24 or equivalent. Cr 3.

126. *Sociology of Urban Life*—A descriptive and analytical approach to the study of city life. Emphasis on environment, social organization, the ecological processes, population, areas, housing, and maladjustments. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

127. *Self and Society*—The behavior and symbolic processes of individuals who occupy positions in social structures, organizations and groups. The behavior of individuals as it is controlled, influenced, or limited by the social environment. The manner in which the behavior of individuals reacts upon, shapes, and alters social structures and enters into the functioning of groups. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

IDL 129. (ARE, Sy). *The Individual and the Community*—Analysis of the functioning and structure of the community. Emphasis on ways in which individuals and groups are affected by community dynamics. Community project. Prerequisite: IDL 24 or Sy 126 or permission. Cr 3.

130. *American Culture and Social Structure*—Mainstream American culture and social structure at the most general level. The major institutional framework of our society and the meaning of systems that underlie it. Distinctive social problems as products of our culture and social structure rather than as incidental accidents. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

131. *Canadian Society*—Provides the non-Canadian student with an overview of the structure of Canadian society. Focus on two broad areas: social institutions and social processes. Prerequisite: Sy 3 and at least one semester of Canadian history, or permission of instructor; not open to freshmen. Cr 3.

135. *Human Ecology*—Spatial distribution of human beings and related activities and social processes. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

137. *The Sociology of Mental Illness* — Examination of the sociological concepts of mental illness. Analysis of the relationship between mental illness and the sociological factors responsible for these disorders. Cross-cultural examination of mental illness. The nature and structure of mental care institutions. Prerequisite: Sy 3 or permission of instructor. Cr 3.

138. *Race and Culture Conflict*—Analysis of factors involved in group conflict, with emphasis on conflict between minority groups in contemporary societies. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

139. *Sociology of Medicine*—The relationship between sociocultural factors and the occurrence of disease and the social systems which are developed in the treatment and prevention thereof. Prerequisite: Sy 3 or permission of instructor; not open to freshmen. Cr 3.

142. *Population and Society*—Population processes and their effects on society. Includes fertility, migration, mortality; population, resources and technology; population, social change and economic development; family planning and population policy. Prerequisite: Sy 3 or permission of instructor. Cr 3.

143. *The Sociology of Counter-Cultures*—Counter-cultures in America: what gives rise to their emergence, who are their advocates, what impact do they have on an ongoing cultural tradition, and when do they generate social structures which actively "carry" them? The "hippie" phenomenon, the recent communal movement, radical feminism, and others. Prerequisite: Sy 3 (Sy 130 recommended) or permission of instructor. Cr 3.

147. *Wealth, Power and Prestige* — Analysis of social inequality within society. Theories and topics within the area of social stratification. Prerequisite: Sy 3 or permission of instructor. Cr 3.

160. *Major Ideas in Sociology* — The sociological theories of Marx, Max Weber, Durkheim, and contemporary theorists such as Parsons and Robert Merton. Developments in sociological theory as related to methodology, social issues, and current trends in contemporary sociology. Prerequisite: Sy 3 or permission of instructor. Cr 3.

163. *The Sociology of Knowledge* — The relationship between knowledge and social interaction. The general characteristics of knowledge as a social phenomenon. The problem of knowledge as being both influenced by and an influence upon the social structure. Prerequisite: Sy 3 or permission of instructor. Cr 3.

165. *Evolution, Revolution and the Future* — Review and analysis of major principles in social change such as social evolution and revolution, their relevance in understanding contemporary social processes in American, Western, Communist and developing societies. Problems of the future society. Prerequisite: Sy 3 or permission of instructor. Cr 3.

169. *Social Movements*—The concern is with *conscious* attempts by large numbers of people to bring about change in society through collective action. The emphasis is on the search for causes of diverse movements like black nationalism, cooperatives and Nazism; and the common factors which underlie their success or failure. Prerequisite: Sy 3 or permission of instructor. Cr 3.

170. *Small Group Analysis*—Communication and interaction patterns within small groups identified and analyzed. Course involves participation in and observation of such interaction. Prerequisite: Sy 3 or permission of instructor. Cr 3.

173. *Topics in Political Sociology*—An examination in depth of two or three topics concerning the relationship of the social and political orders. Topics may vary from year to year. They include political consensus and cleavage, political legitimacy, freedom and equality, the political community, political pluralism, totalitarianism, political revolution, political development, the politics of mass society. Prerequisite: Sy 3 (Sy 112 recommended), or permission of instructor. Cr 3.

175.176. *The Sociology of the Economy*—The relationship, within industrialized societies, between economic behavior and structures and the structure of the total society. Course first considers general social and cultural factors influencing areas of basic economic interest, then the influence of the economy upon other areas of the society. Prerequisite: Sy 3 or permission of instructor. Cr 3.

182. *The Sociology of Religion*—Problems in the description and explanation of religious beliefs and practices. Marx, Weber, Freud, Durkheim. The religious dimensions of social theory; the social construction of religious beliefs. Definitions and measurements of religious phenomena. Religion in primitive and modern societies. The future of illusions. Prerequisite: Sy 3 and Sy 111, or permission of instructor. Cr 3.

190. *Logic of Sociological Inquiry*—The concern here is with the logical and conceptual supports of sociological research. The focus is on application to problem formulation and design in sociological research. Prerequisite: Sy 110 or Sy 160 or permission of instructor. Cr 3.

191. *Practicum in Sociological Research*—Techniques of data collection, including observation, participation, interviewing, questionnaires, and tests. The process and logic of data analysis. Field work to include conducting and analyzing a sociological study. Prerequisite: 12 hours of sociology, including Sy 190, senior level, or permission of instructor. Cr 3.

193. *Practicum in Experimental Research*—Techniques of experimental research in Sociology, including hypothesis construction, operationalization and testing. Students will work primarily in the small groups laboratory running experiments and analyzing data. Prerequisite: 12 hours of Sociology, Sy 190, senior level or permission of instructor. Cr 3.

197.198. *Departmental Projects*—Prerequisites will vary with the particular project. Cr 2 or 3.

Graduate Courses (Sy)

210. *Seminar in Survey Methods*—Cr 3.

211. *Seminar in Advanced Data Analysis and Interpretation*—Cr 3.

212. *Seminar in Field Research Methods*—Cr 3.

215. *The Methodology of Evaluation Research*—Cr 3.

220. *Seminar in Micro-Sociological Theory*—Cr 3.

221. *Seminar in Macro-Sociological Theory*—Cr 3.

290. *Research Frontiers in Sociology*—Cr 1.

297. *Directed Research*—Cr Ar.

298. *Directed Readings*—Cr Ar.

391. *Thesis Seminar*—Cr 1.

399. *Graduate Thesis*—Cr Ar.

Social Work (Sw)

150. *Social Welfare as an Institution*—Social welfare as an institution in American society. Social welfare programs, primarily income maintenance, their philosophical bases, methods and proposals for change. Prerequisite: Sy 3. Not open to freshmen. Cr 3.

151. *Social Work as a Profession*—Issues and dilemmas facing social work as a profession. The role of the social worker in modern society, and its relationship to other helping professions. Prerequisite: Sw 150 or permission of instructor. Cr 3.

152. *Social Work Methods I*—The underlying theory and the basic skills needed for social work intervention in a variety of social work settings. Prerequisite: Sw 150 and Sw 151, or permission of instructor. Cr 3.

153. *Social Work Methods II*—A continuation of Sw 152. Prerequisite: Sw 152 or permission of instructor. Cr 3.

154. *Field Experience in Social Work I*—Field observation and experience in community agencies to enable students to apply social science and social welfare knowledge and to test their motivation and capacity for the field of social work. Prerequisite: senior social welfare majors only. Cr 4.

155. *Field Experience in Social Work II*—Further field experience for the social welfare student. Prerequisite: Sw 154, senior social welfare majors only. Cr 4.

SPECIAL PROGRAMS

PROJECTS-IN-LEARNING

Dean Gordon R. Haaland, Associate Dean Elaine S. Gershman (Chairwoman), Professor Edward S. Northam, Associate Professor Kenneth P. Hayes, Assistant Professor L. Rex Pyles, and three students

Projects-in-Learning consists of several component programs which are experimental in nature, and designed to offer to qualified students an opportunity to explore in depth subjects not normally dealt with in the curriculum.

One program, Independent Study, (I.S. 100) is available to students with an accumulative point average of 2.5 or better and second semester freshman standing or above. Independent study projects are arranged between instructor and student. An instructor helps the student shape a project and is available for guidance at all times; however, emphasis is on the word *independent* and the student is encouraged to work on his own. Independent study projects can be used to satisfy requirements with the prior approval of the department head.

The second component is the Special Seminar (S.S.) Program. Each semester seminars dealing with topics not covered in depth in regular courses are offered to students who have an accumulative point average of 2.0 or better and have second semester freshman standing or above. Emphasis is placed on topics of concern to interested students and faculty and range

from those dealing with contemporary social problems to those designed to explore the unusual and provocative. Examples of seminars recently offered are: "The Brain and the Computer" and "Contemporary Poetry." Special seminars carry degree credit but do not satisfy any university, college or departmental requirements.

A third component to Projects-in-Learning is Freshman Seminar (F.S.A. 99), a non-credit experimental course set up by a faculty adviser for the following purposes: (a) to bring freshmen and faculty into closer association at the very beginning of the student's university career in a small class situation, (b) to provide students in their freshman year with a better opportunity for intelligent decisions in determining their role in higher education, (c) to familiarize them with the many options available to them in making academic decisions, (d) to familiarize freshmen with the basic workings of a university through some of the literature in the area of higher education. There are no eligibility requirements for the student other than first semester standing in the College of Arts and Sciences.

The Projects-in-Learning Program is directed by a supervisory committee which must approve all projects work. Students, faculty and administrators are encouraged to formulate and submit imaginative proposals to the committee which consists of four faculty members and four students.

Eligible students may take the freshman seminar and up to four "projects" in their last three and one half years but no more than one each semester. *All projects work is graded Pass or Fail.*

Information may be obtained from any Projects-in-Learning Committee member or from the Student Information Center, Office of the Dean, 110 Stevens Hall.

THE BACHELOR OF ARTS IN SPECIAL STUDIES

Dean Gordon A. Haaland, Associate Dean Elaine S. Gershman (Chairwoman), Professors Edward S. Northam and Robert B. Thomson; Associate Professors Robert C. Carroll, Stephen A. Norton, John R. Wilson, and one student

A limited number of students in the College of Arts and Sciences are permitted to construct for themselves special "majors" other than those presently existing.

Such students might: (1) be from such groups as the Onward Program; (2) have special backgrounds such as the military, business, the ministry, etc.; (3) be especially gifted in such things as mathematics, computer science, physics, or languages, political experience, law, etc., and for whom the traditional major might unduly restrict their unusual and unique abilities.

The program is centered in the Office of the Dean of the College, and is administered by a Special Studies Committee appointed by the dean.

The program is limited to approximately 50 students, who will declare a BASS major at the usual time in their sophomore year; all college generalization requirements must be met; 120 hours will be required for graduation, 72 of which must be elected outside of any one department; the college 2.0 accumulative average will apply to this program as well as other existing rules (such as those pertaining to the five-course limit per semester except for Dean's List students; the pass-fail regulations; and the rules concerning the Projects-in-Learning Program).

Students in this program must have been in the program for his last 28 hours, and at least 60 hours must be taken in upperclass level courses.

LATIN AMERICAN STUDIES PROGRAM

James Acheson, Associate Professor of Anthropology; Melvin Burke, Associate Professor of Economics; Carlos Cortinez, Assistant Professor of Spanish; Ignacio Galbis, Associate Professor of Spanish; Mary Louise Gross, Assistant Professor of Spanish; William Jeffrey, Professor of History; Twig Johnson, Assistant Professor of Anthropology; Gerald Karush, Assistant Professor of Sociology; Jose Luis Lopez Muñoz, Associate Professor of Spanish; Laura Luszczynska, Associate Professor of Romance Languages; Roland Struchtemeyer, Professor of Soils; Joseph Troiano, Assistant Professor of Spanish and Portuguese

The primary objectives of the Program in Latin American Studies are to give the undergraduate student rigorous training in Latin American area studies, to broaden the scope of his undergraduate training, and to increase his employment possibilities.

A student interested in Latin American Studies will complete the requirement for a major in one of the already established academic fields, and also complete a special set of courses in Latin American studies. Upon graduation, the student will receive a Bachelor's degree in his major subject and a certificate in Latin American studies. The certificate program in Latin American studies is not a major program for Arts and Science students rather it is a program open to *all* students; from all colleges of the University.

Candidates for the certificate are encouraged to have some personal experience in L.A. Ordinarily such experience would be gained as an exchange student or summer student; but it might be gained through a job, Peace Corps, military service, etc.

It might be relatively easy for students in Arts and Sciences to complete the requirements for the certificate. Many Spanish majors are taking most of the required courses now. Students in other fields could not complete the requirements unless they carefully used their electives and went to summer school. Nevertheless, the increased job opportunities would make it worthwhile for them to do so.

The Institute is composed of faculty who have specialty in Latin American studies. The certificate program in Latin American Studies is administered by the Dean of the College of Arts and Sciences in coordination with a committee of Latin American specialists.

A student, with the help of a faculty advisor from the Latin American Institute, will be expected to set up his own curriculum with his own interest in mind. Approval of the program will have to be received before the beginning of the junior year.

The student will be expected to complete a sequence of courses in the three following areas:

1. *Spanish or Portuguese.* Each student to receive the certificate will be expected to pass a proficiency examination in either Spanish or Portuguese.
2. *Social Sciences and Agriculture.* A combination of at least 12 hours of courses in anthropology, agriculture, economics, political science and sociology directly relating to Latin America.
3. *Humanities and History.* At least 6 hours of courses in Latin American history and Latin American literature.

Courses in Latin American Studies

Agriculture

IDL 43 Tropical Agriculture

Anthropology

Ay 153 People and Cultures of Meso-America

Ay 167 Peasant Cultures

Ay Mediterranean Ethnology

Economics

*Ec 138 Economic Development (Burke)**

Ec 139 International Trade (Burke)

History

Hy 147,148 Hispanic America

Hy 149. Argentina, Brazil and Chile

Hy 150. Mexico

Hy 152. Problems of Latin America

Hy 251/252. Latin America and the U.S.

Spanish

Sp 1/2. Elementary Spanish

Sp 3/4. Intermediate Spanish

Sp 5. Spanish Conversation

Sp 6. Spanish Composition

Sp 7. Readings in Spanish Literature

Sp 8. Spanish Play Production

Sp 100. Advanced Spanish Grammar

Sp 101/102. Intro. to Spanish and Hispanic Literature

Sp 103. Cervantes

Sp 104. Golden Age

Sp 105. Spanish Literature of the 19th Century

Sp 106. Spanish Literature of the 20th Century

Sp 107. Contemporary Novel

Sp 108/109. Modern Latin-American Novel and Short Story

Sp 140. Latin American Masterpieces

Sp 142. Contemporary Hispanic Theater

Sp 190. Topics in Spanish

Portuguese*Pt 1/2. Elementary Portuguese***Political Science***Pol 168. Governments in Latin America***Sociology***Sy 142. Demography**Sy 197/198. Modernization (Karush)**Sy 165. Social Change (Karush)*

*If the name of the instructor appears by the course, the candidate should be advised that the same course taught by another member of that department might not necessarily emphasize Latin America. For further information check in the Student Information Center, Office of the Dean of Arts and Sciences, 110 Stevens Hall.

WOMEN'S STUDIES

Students and faculty have often felt that learning is presented in segments of courses that stress contributions, views, theories, and perspectives of "a" discipline rather than knowledge as an integrated, interrelated whole. Interdisciplinary courses in the College of Arts and Sciences offer the opportunity for students and faculty to study an area, subject, theory, period, or movement from a multi-disciplinary perspective. IDL courses are listed in the cooperating departments. Interdisciplinary courses may be used to fulfill major requirements by permission of the departments involved.

One of the areas that can be studied through an interdisciplinary approach is women's studies. As women attempt to find their way in a society which now guarantees equal rights and men attempt to understand and accept women as equals, the need arises to correct "the unconscious designation of women which has distorted her intellectual and artistic contributions." The courses focus on language research, society, and aesthetics as they relate to women.

See Collegiate Descriptions for IDL courses.

SPEECH COMMUNICATION (SC)

Professors Gardner, Dopheide; Associate Professors Burns, Gillespie, Hartman, Pettit, Van Rheenen (Chairman); Assistant Professors Davies, McKerrow, LaRiviere; Instructor Mower; Lecturer Holms, Pickering

Departmental Studies lead to a B.A. in Speech Communication. The programs offered by the department are designed to expand the student's awareness and understanding of the genesis, development, functions, roles, and uses of spoken communication behaviors. Departmental majors may concentrate in either Human Communication Studies or in Communication Disorders. The undergraduate program in Human Communication Studies prepares majors as specialists in the theory, research, and pragmatics of spoken communication between persons, whether the communicating occurs within one-to-one, small group, organizational, or public contexts. The undergraduate program in Communication Disorders equips majors with pre-professional competencies that should enable them to undertake advanced Master's study recommended for entrance to the profession of speech pathology or audiology.

Requirements for majors: All departmental majors are required to complete four core courses within the department: Theories of Speech Communication (SC 109), Foundations of Rhetorical Theory (SC 111), Language and Speech Development (SC 180), and Basic Research in Speech Hearing Science (SC 184). Majors must also take a six-hour sequence in a foreign language *or* in linguistics (general, psych-, or socio-) outside the department. In addition, majors are required to take six hours in statistics and/or computer science. Any of the above may be used to meet college requirements as well as departmental requirements.

Persons in Human Communication Studies who are interested in *Applied Communication* in business, organizations, or professions may supplement coursework in Speech Communication with appropriate courses in Business Administration and other fields and thereby prepare themselves as communication specialists and consultants in a non-academic career. Such persons are encouraged to take Field Experience in Speech Communication (SC 150) and to actively participate in the University Forensics Program (SC 51.52). Other course sequences coupled with collateral areas in other departments will permit the student to specialize in *Human Communication Theory and Research*, which includes such sub-areas as Interpersonal

and Small Group Communication, Persuasion and Argumentation, Humanistic and Social Scientific Theories of Communication, Analysis and Criticism of Discourse, Role of Public Discourse in History, and Aesthetic Dimensions of Communication. Persons may also specialize in *Speech Communication Education* if they plan to become teachers at the elementary or secondary levels. They should plan to take Teaching of Speech Communication (SC 197) and appropriate collateral courses in Education, English, and Theatre. Specific requirements for the program or recommendations for the sub-areas are available in the departmental office.

Persons who declare a major in Speech Communication but, in addition, desire to concentrate in Communication Disorders, must meet a set of special entrance requirements to that program. The requirements are as follows: (1) a GPA of at least 2.8 in all College of Arts and Sciences' courses during his/her first three semesters of University work, providing that average is based on at least 30 hours of work in the College; (2) three letters of recommendation addressing specific concerns relevant to a career in the field; (3) a statement of extra-curricular or co-curricular activities (both high school and university); and (4) attendance at a series of group and individual meetings on career choice sponsored by the Department. All materials are due before April 1 of the academic year preceding desired entrance to the program. Specific rationale, details on the program requirements, and application forms are available in the departmental office.

All majors are expected to take advantage of the laboratory and service opportunities provided through the Conley Speech and Hearing Center and the University Forensics Program. The Conley Speech and Hearing Center provides training opportunities for those preparing for careers as speech clinicians and provides services for persons who are speech, language, and hearing impaired. The University Forensics Program offers practical experience in debate, negotiation, discussion, speech making, and oral interpretation of literature both in the local area and in the nation.

The department offers programs leading to the Master of Arts degree. Further details may be found in the Graduate School Catalog.

Courses in Speech Communication (SC)

2. Fundamentals of Interpersonal Communication—The basic elements of interpersonal communication, with special emphasis on developing knowledge and skills applicable to face-to-face interactions between individuals and in small groups. Cr 3.

3. Fundamentals of Public Speaking—The nature and problems of public speech communication, with practical experience in representative speaking experiences. Cr 3.

6. Fundamentals of Interpretation—An introduction to the art of interpretation in order to stimulate an understanding and responsiveness to literature and to develop the ability to convey to others, through oral reading, an appreciation of that literature. Cr 3.

9. Parliamentary Procedure—The principles and methods by which groups organize themselves and transact business with efficiency and fairness. Cr 1.

35. Directed Speech Improvement — A study of the voice and articulation needs of students who have demonstrated an ineffective use of certain vocal factors and the establishing of programs of self-improvement for each student admitted to the course. May be repeated. Cr 1.

45. Discussion and Inquiry—An introduction to the principles of the decision-making process involved in the area of discussion and group inquiry as a means of solving problems. Practical application of these principles through classroom experiences. Prerequisite: SC 2 or equivalent. Cr 3.

47. Debate and Advocacy—An introduction to the principles of the decision-making process involved in the area of debate and advocacy, with emphasis on the use of reason in controversy. Practical application of these principles through classroom experience. Prerequisite: SC 3, or equivalent. Cr 3.

51.52. Debate Laboratory—Practical application of the principles and procedures of debate through the University of Maine Forensic Program. Prerequisite: SC 47 or permission. Lab 2, Cr 1.

53. Contemporary American Speakers—The public address of 20th century America. Representative speakers of all races and classes, the issues about which they are talking, and the rhetorical manner in which they attempt to deal with the problems of contemporary society. Prerequisite: SC 3 or permission. Cr 3.

56. Advanced Oral Interpretation—The particular problems involved in the oral reading of the following: (1) prose, (2) poetry, and (3) drama. Prerequisite: SC 6 or permission. Cr 3.

57. Business and Professional Speaking—Advanced study and practice in specialized audience analysis, strategies and tactics, conference procedures, interviewing techniques, and delivery of scientific and professional presentations. Prerequisite: SC 2 or 3 or permission. Cr 3.

101. Persuasive Speaking—The principles involved in influencing an audience, with emphasis on the means by which speakers try to influence the attitudes, beliefs, values, and actions of others. Experience in creating and evaluating persuasive messages and campaigns. Prerequisite: SC 2 or 3. Cr 3.

103. Speech Analysis and Criticism—The basic theories of rhetoric as they relate to the problems and issues involved in the critical analysis of human communication. Prerequisite: SC 2 or 3 or 6. Cr 3.

109. Theories of Speech Communication—The development of empirical and behavioral theories concerning intrapersonal, interpersonal, and public communication. Prerequisite: SC 2 or 3. Cr 3.

111. Foundations of Rhetorical Theory — Examination of the rhetorical foundations of human communication through a comparative study of leading philosophical and rhetorical perspectives with illustrative case studies. Prerequisite: SC 2 or 3 or 6. Cr 3.

130. Introduction to Communication Disorders — A survey of the major disorders of language, speech, and hearing with attention to their recognition and the principles of their treatment. Recommended for all teachers. Not open to freshmen. Cr 3.

150. Field Experience in Speech Communication — Approved work experience for departmental majors in the application of speech communication to practical, theoretical or research problems in any public service agency, business, or other setting approved by the department. Requirements include an initial written application showing the projected experience and its relevance to speech communication, conference with faculty supervisor, periodic logs or summaries, plus a final written report. Not more than 12 hours may count toward graduation and not more than 6 hours may count toward the departmental major. Prerequisites: completion of at least 15 hours in speech communication and permission of the departmental field experience committee. Cr 1-6.

180. Language and Speech Development—The psychological and sociological foundations of language development and the sequential aspects of speech development. The interrelationships of the natural and behavioral sciences in understanding the speech and language processes. Limited to juniors and seniors or by permission. Recommended for teachers. Cr 3.

181/182. Fundamentals of Speech Pathology—The diagnosis and treatment of speech disorders presented by children and adults. Emphasis on the interpersonal therapeutic experience and the basic procedures followed by the speech and hearing clinician. Not recommended for classroom teachers. Prerequisite: permission. Limited to junior or senior majors. Lec 2, Lab 2, Cr 3.

183. Anatomy and Physiology of the Speech Mechanism—The structures, the muscular system, and the nervous system underlying breathing, phonation, articulation, and language. Emphasis on normal neurophysiological function; attention to organic pathologies affecting speech and language. Limited to juniors and seniors. Cr 3.

184. Basic Research in Speech and Hearing Science—An introduction to research findings on the importance of acoustical, physiological, and perceptual factors in speech production and reception. Methodology and instrumentation employed in such research are surveyed. Limited to juniors and seniors. Cr 3.

186. Clinical Practicum I — Supervised therapy experience with selected clients in the University of Maine Speech and Hearing Center. Minimum of four contact hours each week, plus weekly supervisory conference. May be repeated for a maximum of six credits. Prerequisite: 18 hours in speech pathology, including SC 181/182. Cr 3.

187. Organic Speech Disorders—A study of the diagnosis and treatment of speech disorders of organic origin: Cleft palate, cerebral palsy, aphasia, and dysarthrias. *Not recommended for classroom teachers.* Prerequisite: SC 181, SC 130. Cr 3.

188. Hearing Impairment—An introduction to normal auditory function as a basis for understanding disorders of hearing. Procedures for hearing assessment and rehabilitation methods used with the hearing-impaired person. Limited to juniors and seniors. Cr 3.

189. Introduction to Audiology—The field and profession of audiology. A study of the methods of hearing assessment, including their administration and interpretation. Audiometric identification of hearing loss and rehabilitation of the hearing-impaired person. Prerequisite: SC 188. Cr 3.

190. Ensemble Interpretation—The theories and styles of oral presentation of literature, with application of the basic principles to the problems of group interpretation of literature. Emphasis on methods, materials, and actual group reading. Prerequisite: SC 6. Cr 3.

195.196. Problems in Speech Communication — For the advanced student desiring to study a particular problem under the guidance of a member of the staff. Prerequisite: permission of department chairman. Cr 1-3.

197. Teaching of Speech Communication—Curricular and co-curricular programs in the secondary school. Problems, methods, and materials related to the high school course or courses in speech and to the directing of the forensic program in debate and individual events. Prerequisite: 12 hours of departmental courses. Cr 3.

Graduate Courses (Sh)

- 202. 20th Century Public Address*—Cr 3.
204. Persuasion—Cr 3.
206. Rhetorical Theory—Cr 3.
208. Communication Theory—Cr 3.
255. History of American Public Address—Cr 3.
281. Articulation Disorders—Cr 3.
282. Voice Disorders—Cr 3.
283. Stuttering—Cr 3.
285. Language Disorders—Cr 3.
286. Current Issues in Clinical Practice—Cr 1-3.
288. Aural Rehabilitation—Cr 3.
301. Seminar in Research Methods—Cr 3.
302. Teaching Speech Communication in College—Cr 1.
384.385. Diagnostic Procedures in Speech Pathology—Cr 2.
386. Clinical Practicum II—Cr 1-2.
387. Seminar in Speech and Hearing Services—Cr 3.
388. Seminar in Language Disabilities—Cr 3.
390.391. Directed Research—Cr 1-3.
399. Graduate Thesis—Cr Ar.

ZOOLOGY (Zo)

Professors Allen, J. Cook, Dean, C. Major, Mun, Pratt, Valteau, Roberts (Chairman); Associate Professors Dearborn, DeWitt, Hatch, Haynes, Hidu, McAlice, J. McCleave, Vadas; Assistant Professors Eckhardt, LaBar, Ringo, Shick, Wood; Lecturers Bailey, Beauregard, Bernstein, Bessette, Blazer, Cherry, Dahl, Eicher, Fell, Frantsi, Ginn, Guinard, Hartman, Kandutsch, Kinter, LaMarche, Lennon, Martin, McGlauffin, Mobraaten, Morton, Potts, Roderick, Rundell, Russell, Sbaschnig, Stevens, Stocks, White, Wilson, Winter; Teaching Associate Blake; Part-time Instructors B. Cook, M. Major, B. McCleave, Weatherbee; Instructor Baker

The Department of Zoology offers a varied program for the study of animal biology. This includes all aspects of animal life, such as anatomy, physiology, embryology, heredity, and ecology. Thus, a curriculum can be tailored to meet the needs of the individual student. To this end each major student is assigned a senior faculty member as his academic adviser, and close faculty-student relationship is emphasized.

Upon graduation, a zoology major may enter various areas of education, industry and research. Zoology graduates hold positions as varied as museum curator, teacher (elementary to college level), hospital administrator, marine biologist, ranger-naturalist, medical and biological illustrator, medical researcher, and science writer.

A zoology major may prepare also for graduate study in the various areas of biology (see Graduate Catalog) and for professional training in medical and dental schools, medical technology, optometry, and in other health sciences.

The Zoology Department offers work leading to the degrees of bachelor of arts in zoology, master of science in zoology and doctor of philosophy. It also administers the program leading to the degree of bachelor of arts in medical technology. A curriculum leading to the degree of

bachelor of arts in biology is also available. Those who are interested should consult with the department chairman.

The department maintains a cooperative graduate program with The Jackson Laboratory, Bar Harbor, Maine, for the study of mammalian genetics. It is a cooperating member of The Ira C. Darling Center, Walpole, Maine, a branch of the University which provides facilities for marine-oriented studies. The Maine Cooperative Fishery Unit provides opportunity for training and research in fishery science. It is operated by the University under a cooperative agreement with the U.S. Fish and Wildlife Service, the Bureau of Sport Fisheries and Wildlife, and the Maine Department of Inland Fisheries and Game. The Fishery Unit staff are members of the Zoology Department. Cooperative research programs are underway with members of the staff at Huntsman Laboratory, St. Andrews, N.B., Canada.

Facilities

The Zoology Department is housed in Murray Hall, a modern structure of approximately 60,000 square feet of floor space, which provides well-equipped teaching and research laboratories. Special facilities include RCA EMU-3G and Philips 201 electron microscopes, a GE 250 KVP X-ray machine, a Packard liquid scintillation counter, a central micro-technique facility and an aquatic laboratory which supplies special well water to aquaria. Darkrooms for photography and autoradiography, and cold rooms are provided in Murray Hall. Air-conditioned animal quarters for breeding colonies are maintained by a full-time attendant. The Zoological Collections of various animal groups are described elsewhere, under Scientific Collections.

Requirements for the Zoology Major

In addition to the general requirements of the college, the department requires the following courses for the B.A. degree in zoology:

Bio 1, Basic Biology, and *Zo 4, Animal Biology*, or *Bt 2, General Botany*
Ch 11/12, General Chemistry, or *Ch 13/14, Chemical Principles*
Ch 151/152, 161/162, Organic Chemistry (with lab), or *Bc 21, Organic Chemistry and Bc 122, Biochemistry*
Ms 26, Analytic Geometry and Calculus
Ps 1a/2a, or Ps 1/2, General Physics

Twenty-two hours of advanced work are required of all Zoology majors. At least one course must be selected from each of the following categories while fulfilling the required 22 hours.

- I. *Zo 131, Vertebrate Biology*
Zo 133, Comparative Anatomy
Zo 136, Developmental Biology
Zo 139, Mammalogy
Zo 151, Histology
Zo 152, Animal Microtechnique
Zo 153, Invertebrate Zoology
- II. *Zo 162, Principles of Genetics*
- III. *Zo 177, Animal Physiology*
Zo 178, General Physiology
- IV. *IDL 119, General Ecology*
Zo 158, Animal Parasitology
Zo 186, Physiological Ecology

Requirements for the Biology Major (B.A.)

In addition to the general requirements of the college, the department requires the following courses for the B.A. degree in Biology:

Bio 1, Basic Biology, and *Zo 4, Animal Biology*, and *Bt 2, General Botany*
Ch 11/12, General Chemistry, or *Ch 13/14, Chemical Principles*
Ch 151/152, 161/162 Organic Chemistry (with lab), or *Bc 21 Organic Chemistry and Bc 122 Biochemistry*
Ms 26 Analytical Geometry and Calculus
Ps 1a/2a General Physics
Mb 127 General Microbiology and Mb 128 General Microbiology Laboratory
En 26 Introductory Entomology and En 26L Introductory Entomology Laboratory

Eighteen hours of advanced course work are required. It is highly recommended that at least one course be elected from each of the following categories while fulfilling the required 18 hours:

- I. *Bt 135, Plant Anatomy*
En 251, Morphology of Insects
Zo 133, Comparative Anatomy
Zo 136, Developmental Biology
Zo 151, Histology
- II *Bt 153, Plant Physiology*
Mb 153, Bacterial Physiology
Zo 177, Animal Physiology
Zo 178, General Physiology
- III. *Zo 162, Principles of Genetics*
- IV. *Bt 130, Plant Ecology*
Fy 19, Ecology
IDL 119, General Ecology
- V. *Bt 164, Taxonomy of Vascular Plants*
En 140, Insect Biology and Taxonomy
Mb 136, Determinative Bacteriology
Zo 131, Vertebrate Biology
Zo 153, Invertebrate Zoology

**SPECIMEN CURRICULUM FOR ZOOLOGY MAJORS
(AND FOR PREMEDICAL/PREDENTAL STUDENTS
MAJORING IN ZOOLOGY*)**

Freshman Year					
FALL SEMESTER		Hours	SPRING SEMESTER		Hours
Eh 1	Freshman Composition or		Ms 26	Anal. Geometry & Calculus	4
Eh 7	Advanced Composition	3	Pe 1	Physical Education	1
Ms 4	Algebra & Trigonometry	4	Zo 4	Animal Biology	4
Pe 1	Physical Education	1		Intermediate Foreign Lang.	3
Bio 1	General Biology	4		Social Science	3
	Intermediate Foreign Lang.	3			
		15			15
Sophomore Year					
Ch 11 or 13	Chemical Principles	4	Ch 12 or 14	Chemical Principles	4
Zo 133	Comparative Anatomy	4	Zo 136	Developmental Biology	4
	or	4		Fine Arts	3
Zo 153	Invertebrate Zoology	3		Social science	3
	Fine Arts	3			
	Elective	4			
		15			14
Junior Year					
Ch 151	Organic Chemistry	3	Ch 152	Organic Chemistry	3
Ch 161	Organic Chemistry Lab	2	Ch 162	Organic Chemistry Lab	2
Ps 1a	General Physics	4	Ps 2a	General Physics	4
Zo 177	Animal Physiology	4	Zo 162	Prin. of Genetics	4
	Elective	3		Elective	3
		16			16
Senior Year					
Zo 186	Physiological Ecology	4		Zoology Elective	4
	Humanities	3		Humanities	3
	Electives	8		Electives	8
		15			15

*See Index for premedical programs.

*SPECIMEN CURRICULUM FOR MEDICAL TECHNOLOGY

Freshman Year

FALL SEMESTER			SPRING SEMESTER		
Course		Hours	Course		Hours
†Ch 11	Chemical Principles	4	†Ch 12	Chemical Principles	4
†Ms 4	Algebra and Trigonometry	4	†Ps 3	Descriptive Physics	4
†Bio 1	Basic Biology	4	†Zo 7	Medical Technology Orientation	1
	Elective Arts and Science requirements	3		Electives Basic Arts and Science requirements	6
		<hr/> 15			<hr/> 15

Sophomore Year

†Ch 140	Quantitative Analysis	4	†Mb 152	Pathogenic Bacteriology and Serology	4
†Mb 127	General Microbiology	5	†Zo 158	Animal Parasitology	4
-128	Elective Basic Arts and Science requirements	3	†Zo 121	Intro. to Clinical lab methods	3
†Zo 10	Anatomy & Physiology	4		Electives Basic Arts & Science requirements	6
		<hr/> 16			<hr/> 17

Junior Year

†Bc 21	Organic Chemistry	4	Bc 122	Biochemistry	4
†Zo 151	Histology	4		Electives Basic A & S Requirements	3
	Electives Basic A & S requirements	6	†Electives Med. Tech.		9
	Medical Technology Elective	3			
		<hr/> 17			<hr/> 16

Electives designated "Medical Technology" are to be selected from this list.

Zo 177 — Physiology

Zo 152 — Animal Microtechnique

Zo 162 — Genetics

Fn 152 — Human Nutrition

Mb 176 — Virology

Mb 280 — Immunology

or computer science or statistics.

**Senior Year

Twelve months in either the Eastern Maine Medical Center (EMMC), Bangor, Maine; the Central Maine General Hospital (CMGH), Lewiston, Maine; or the Maine Medical Center (MMC), Portland, Maine.

Year's Curriculum

Zo 122. Clinical Hematology	7 credits
Zo 123. Clinical Microbiology	7 credits
Zo 124. Clinical Immunohematology	7 credits
Zo 125. Clinical Chemistry	9 credits
Zo 126. Clinical Microscopy	2 credits
Total	<hr/> 32 credits

* This curriculum is currently under revision and is subject to change. All medical technology majors will be duly notified if any changes occur in the course requirements.

** Students desiring to spend their senior year at the University of Maine may do so by electing the proper advanced courses along with a departmental major other than medical technology. Such students are candidates for the bachelor's degree in the major fields of their choice. They are eligible for the certificate of M.T. (ASCP) only upon completion of a fifth year of training in an accredited hospital training program which the students would have to obtain on their own.

† These courses or their equivalents, are required for the major in medical technology.

Courses in Zoology (Zo)

Bio 1. Basic Biology — A one semester introduction to fundamental concepts of structure and function in living systems, both plant and animal. Offered for 4.0 credits but more or less credit can be obtained by special arrangement. Lectures twice a week; laboratories arranged. Audio tapes available as study aid; study center staffed by instructors. Lec 2, Lab 4, Cr 4.

4. Animal Biology — Second semester course includes an introduction to vertebrate and invertebrate structures and functions (emphasizing basic physiological principles), ecology and evolution. Lec 2, Lab 4. Cr 4

7. *Orientation in Medical Technology* — An introduction to the profession of medical technology for second-semester freshman medical technology students. Required. Lec 1, Cr 1.

8. *Anatomy and Physiology*—The general principles of animal life, with emphasis on the structure and functions of the human body. Prerequisite: Bio 1 or Zo 3. Students completing Zo 4 can not take Zo 8. Lec 2, Rec 1, Lab 2, Cr 4.

10. *Anatomy and Physiology*—Similar to Zo 8, with additional time for laboratory. For students in the School of Nursing. Lec 3, Lab 4, Cr 5.

IDL 19. (Fy, Bt, Zo) Introduction to Ecology — Emphasizing ecological principles and their relationships to the natural environment and man. Not open to majors in biological sciences or resource management areas. Lec 3, Cr 3.

100. *Drug Use and Abuse*—An introduction to drugs of importance in contemporary society. Emphasis on those of biological, medical, and social importance, survey of principles of administration, dose response curves, physiological and pharmacological actions, and toxicity. Prerequisite: Zo 4, 8, 10. Lec 2, Cr 2.

IDL 119. General Ecology — Course in ecological principles for the science major. Major topics include environmental factors, population ecology, community ecology and ecosystem energetics. Prerequisites: one year college chemistry; one year college biological science. Lec 3, Cr 3.

IDL 119L. Ecology Laboratory and Field Course — Ecosystems studied in the field, and ecologic experimentation in the laboratory, to illustrate ecologic principles and provide technical experience. Saturday field trips. Prerequisites: IDL 119 and a course in statistics (may be concurrent). Lab and field 6, Cr 3.

121. *Introduction to Clinical Laboratory Methods* — An introduction to basic theory and methods in clinical hematology and urinalysis. Required for medical technology students. Prerequisite: Zo 4 or 10, Ch 11/12, Ch 140. Lec 1, Lab 4, Cr 3.

122. *Clinical Hematology* — A comprehensive study of the principles, methodology and pathological states in hematology. Lectures and laboratory practice. (EMMC, CMGH, MMC) Cr 7.

123. *Clinical Microbiology* — A comprehensive study of the principles and techniques of diagnostic microbiology and parasitology. Lectures and laboratory practice. (EMMC, CMGH, MMC). Cr 7.

124. *Clinical Immunohematology* — Lectures and laboratory practice in the fundamental techniques used in blood grouping and cross-matching proceeding to advanced studies of human blood groups, theory and practice in special problems, and advanced technique. (EMMC, CMGH, MMC). Cr 7.

125. *Clinical Chemistry* — Lectures and laboratory exercises in basic techniques of clinical chemistry proceeding to advanced theories and methodology and including theory and technique of immunochemistry. (EMMC, CMGH, MMC). Cr 9.

126. *Clinical Microscopy* — Lectures and laboratory practice in the microscopical examination of urine and body fluids. (EMMC, CMGH, MMC). Cr 2.

131/132. *Vertebrate Biology* — An introduction to the classes of vertebrates: their characteristics, evolution, physiology, ecology, and behavior. Emphasis on adaptive strategies in the environment. Prerequisite: Zo 4. Lec 3, Cr 3.

131L/132L. *Vertebrate Biology Laboratory* — Anatomy of representatives of vertebrate classes; taxonomy of regional vertebrate fauna. Fishes, amphibians and reptiles covered in 131L; birds and mammals in 132L. Prerequisite: Zo 131 concurrently with Zo 131L; Zo 132 concurrently with Zo 132L. Lab 2, Cr 1.

133. *Comparative Anatomy*—The structure, origin, and history of the vertebrate organ-systems. Prerequisite: Zo 4 or permission of instructor. Lec 2, Lab 4, Cr 4.

134. *Biological Ultrastructure*—The ultrastructure of the cells of multicellular organisms, protozoa, bacteria and viruses. Prerequisite: Zo 151 and Biochemistry. Lec 3, Cr 3.

136. *Developmental Biology*—The transformation of the fertilized egg into a new adult individual: the concepts of growth and development of organisms. Prerequisite: Zo 4. Lec 2, Lab 4, Cr 4.

IDL 140. (GY, ay, bt, s, zo) Seminar in Quaternary Studies—A multi-disciplinary seminar concerned with selected areas of study—physical, biological and anthropological—related to the Quaternary Period. Subject areas will vary each semester. Can be taken more than once for credit. Prerequisite: consent of instructor. Lec 2, Cr 2.

151. Histology—Microscopic anatomy of animal tissues. Prerequisite: Zo 4. Lec 2, Lab 4, Cr 4.

152. Animal Microtechnique—Histological and histochemical techniques for the preparation of animal tissues and cells for microscopic study. Medical technology majors; others with permission of the instructor. Prerequisite: Zo 4. Lec 1, Lab 4, Cr 3.

153. Invertebrate Zoology—The morphology, ecology, life histories and phylogenetic relationships of invertebrates exclusive of insects. Prerequisite: Zo 4. Lec 2, Lab 4, Cr 4.

155. Biology of Behavior—Mechanisms of animal behavior, stressing how behavior adapts animals to their environments. Prerequisite: Zo 4 or equivalent. Lec 3, Cr 3.

155L. Biology of Behavior Laboratory—Prerequisite: Zo 155 or concurrently. Lab 4, Cr 2.

158L. Animal Parasitology Laboratory—Prerequisite: Zo 158 or concurrently. Lab 4, Cr 2.

162. Principles of Genetics—The nature of hereditary factors and the mechanisms by which they are transmitted and expressed. Prerequisite: Bio 1 and junior standing. Lec 3, Lab 2, Cr 4.

165. Evolution—The origin and development of evolutionary theory and the mechanisms which bring about the genetic differentiation of groups of organisms. Prerequisite: Bio 1. Lec 3, Cr 3.

IDL 170. (OC, zo) Introduction to Oceanography—Basic concepts in physical, geological, chemical, and biological oceanography. Prerequisite: one year each of mathematics, physics, chemistry, and biology, or permission of instructor. Lec 3, Cr 3. Seniors and graduates.

171. Fishery Biology—Introduction to theory and practice of contemporary fishery biology emphasizing ecology, life history, fish population sampling and manipulation, human factors and multiple use concepts. Prerequisites: Zo 131, Zo 156 or Fy 19. Recommended: Fy 4 or Ms 19 and Zo 168. Lec 3, Cr 3.

171L. Fishery Biology Laboratory—Field and laboratory exercises providing experience with techniques commonly employed in fishery biology. Data interpretation and report preparation. Two Saturday field trips. Offered spring and fall semesters. Fall emphasizes medical aspects of vertebrate physiology; spring, comparative vertebrate physiology. Prerequisite: Zo 171 or concurrently. Lab 2, Cr 1.

177. Animal Physiology—Physiological processes in vertebrates with emphasis on the integration of organ systems. Offered spring and fall semesters. Fall emphasizes medical aspects of vertebrate physiology; spring, comparative vertebrate physiology. Prerequisites: Zo 3/4 or Bt 1-Zo 4; one year of chemistry and junior standing. Lec 2, Lab 4, Cr 4.

178. General Physiology—Chemical and physical phenomena common to all organisms, approached primarily at the cellular level. Prerequisite: Zo 4; Organic Chemistry and year of physics. Lec 2, Cr 2.

178L. General Physiology Laboratory—An optional laboratory illustrating methods used in the study of phenomena common to all organisms. Lab 4, Cr 2.

179. Experimental Endocrinology—A comprehensive survey of the vertebrate endocrine glands and their functional relationships. The experimental and comparative approach emphasized. Prerequisite: Zo 177 and Organic Chemistry. Lec 2, Lab 4, Cr 4.

180. Cell Physiology—A physico-chemical analysis of cell metabolism. Emphasis on mechanisms controlling growth and division. Prerequisite: Zo 4, Organic Chemistry or Biochemistry. Lec 2, Cr 2.

180L. Cell Physiology Laboratory—Prerequisite: Zo 280 or concurrently. Lab 4, Cr 2.

186. Physiological Ecology—The functions and adaptive responses of animals to environmental variables, with emphasis on marine and estuarine invertebrates. Extensive reading in original literature required. Prerequisite: Zo 177 or 178. Lec 3, Cr 3.

186L. Physiological Ecology Laboratory—Independent student projects involving field observation and collection, and laboratory analysis of animal responses to marine environmental factors. Prerequisite: Zo 186 or concurrently and permission of instructor. Lab 4, Cr 2.

187, 188. Problems in Zoology—Open to juniors and seniors who have special interest and qualifications in some branch of zoology. Admission by permission of department chairman. Cr Ar.

GRADUATE STUDY IN ZOOLOGY

The department offers work leading to the degrees of master of science and doctor of philosophy, the general requirements for which are listed under Graduate Study.

A reading knowledge of an appropriate foreign language is a requirement for the Ph.D. degree. In the major field, all courses numbered 200 or over are given primarily for graduate credit. All courses numbered 100 to 199 may be taken for graduate credit, with the prior approval of the student's advisory committee. Students may be required to take, without graduate credit, certain undergraduate courses which they lack.

Specific fields of interest for thesis subjects include cytology, ecology, experimental embryology, fishery biology, general physiology, genetics, and invertebrate zoology.

Graduate Courses in Zoology

IDL 201. (OC, zo) Biological Oceanography—The study of marine organisms and their interrelationships with the chemical, geological and physical aspects of their environment. Prerequisite: one year of general biology and permission of instructor. Lec 3, Cr 3.

IDL 208. (OC, zo) Anatomy and Classification of Fishes—An introduction to the classification of fishes, including fossil forms, and a discussion of those aspects of fish anatomy of most value in systematics. Prerequisite: Zo 133 and/or 136, or permission of instructor. Lec 3, Lab 4, Cr 5.

IDL 210. (Oc, zo) Marine Invertebrate Zoology—Systematics and adaptive-functional morphology of free-living marine invertebrates, excluding protozoans, with laboratory emphasis on studies of living material from the local fauna. Numerous field trips required. At Darling Center, summers only. Prerequisite: Zo 153 or equivalent. Lec 2, Lab 6, Cr 5.

IDL 211. (OC, zo) Larval Biology of Marine Invertebrates—Life-histories of free-living marine invertebrates, excluding protozoans, with emphasis on development, behavior, and ecology of larval forms. Laboratory studies stress methods of procuring, handling, and culturing larvae for descriptive or experimental purposes. Numerous field trips required. Summers only, at The Darling Center. Prerequisite: Zo 153 or equivalent. Lec 2, Lab 6, Cr 5.

212. Polar Ecology—The interrelationships between organisms and their physical and biotic environment in high latitudes. Marine ecosystems will be emphasized. Not offered spring 1977. Prerequisite: Zo 153 and Zo 156, or equivalent, or permission of instructor. Lec 3, Cr 3.

232. Ichthyology—The characteristics, functional anatomy, behavior and ecology of fishes. Lectures, laboratory study, and field trips. Prerequisite: permission of instructor. Lec 2, Lab 4, Cr 4.

233. Mammalogy—Characteristics, functional anatomy, physiology, behavior and ecology of mammals. Lectures, laboratory study and field trips. Prerequisite: Zo 132 or permission. Lec 2, Lab 4, Cr 4.

234. Ornithology—Characteristics, functional anatomy, physiology, behavior and ecology of birds. Lectures, laboratory study and field trips. Prerequisite: Zo 132 or permission. Lec 2, Lab 4, Cr 4.

Zo 237. Experimental Embryology—Analysis of the components of development including growth, morphogenesis, and differentiation. Not offered fall 1976. Prerequisites: Zo 136, Zo 177, and permission of instructor. Lec 2, Lab 4, Cr 4.

250. Genetics of Populations—An introduction to the study of the genetic structure of populations and the factors which affect the genetic composition of populations. Prerequisites: Zo 162 and Ms 26. Lec 3, Lab 2, Cr 4.

IDL 252. (Zo, Py). Behavior Genetics—Genetic analysis of behavior in several organisms including *Drosophila*, *Mus* and man. Current literature on behavioral mutants and polygenic behavior discussed in depth. Not offered spring 1977. Prerequisite: Zo 162 and Ms 19 or equivalent. Lec 2, Rec 1, Cr 3.

253. Advanced Human Genetics and Metabolism—An examination of the development of human metabolic and physiologic functions with primary consideration of genetic mechanisms and regulatory events including chromosomal and Mendelian inheritance, multi-factorial traits, and a comprehensive analysis of biochemical lesions involved in inherited metabolic disease. Prerequisite: Zo 162, Bc 161, Bio 51 or equivalents. Cr 3.

IDL 263. (BT, oc, zo) Marine Benthic Ecology—An advanced course emphasizing ecological studies on benthic intertidal and subtidal marine organisms. Limiting factors, distributions, zonation, biotic interactions, food webs, succession, productivity, energy, community structure and species diversity. Prerequisite: a course in ecology. Lec 2, Rec 1, Cr 3.

270. *Advanced Topics in Aquatic Biology*—In-depth study of various aspects of freshwater or marine biology. Students select topic, prepare critical papers and organize discussion. May be repeated for credit. Prerequisite: permission of instructor. Cr 2.

273. *Fisheries Science*—Field and laboratory exercises in the application of scientific techniques to the study of fish populations. Population estimation, growth rate determinations, fish production and propagation in freshwater and marine environments. Prerequisites: Ms 19 or Fy 4 and Zo 171, or permission. Not offered spring 1978. Lec 1, Lab 3, Cr 2.

292. *Functional Anatomy of Marine Invertebrates*—Detailed studies of the functional anatomy of selected groups of marine invertebrates. Adaptations to specific environments and feeding biology emphasized. Laboratory work will deal primarily with live material. Not offered spring 1977. Prerequisite: Zo 153 or equivalent. Lec 1, Lab 4. Cr 3.

IDL 340. (*BT, en, fy, zo*) *Seminar in Ecology*—Lec 1, Cr 1.

354. *Advanced Genetics*—Lec 3, Cr 3.

357. *Population Dynamics*—Lec 2, Cr 2.

381. *Experimental Physiology*—Lec 2, Lab 2, Cr 3.

384. *Advanced Cell Physiology*—Lec 2, Cr 2.

391.392. *Problems in Zoology*—Cr Ar.

393.394. *Problems in Biological Oceanography*—Cr Ar.

399. *Graduate Thesis*—Cr Ar.



