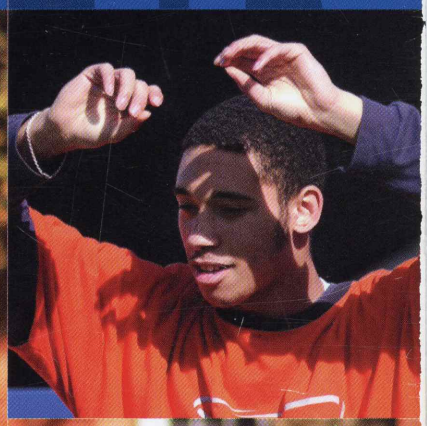
2002

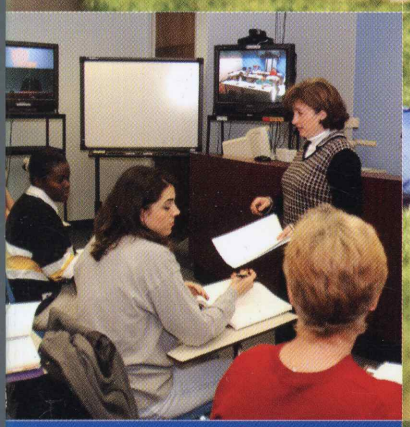
2002-2003 Louisiana Tech University Catalog

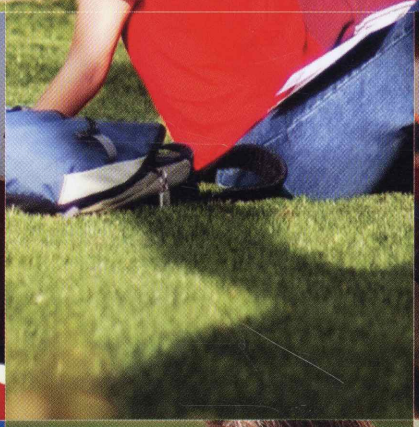
Louisiana Tech University

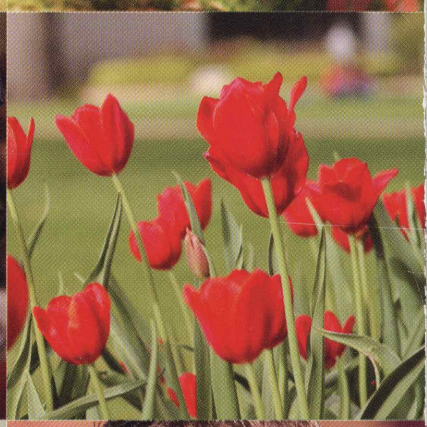
BULLETIN

2002 2003

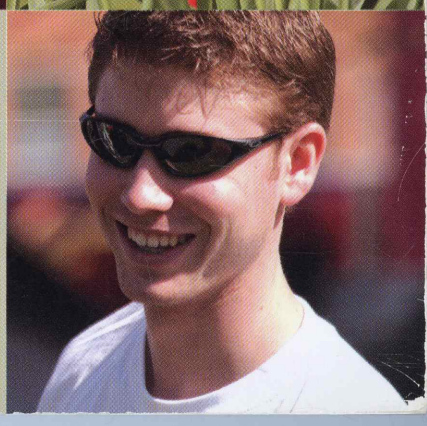








LOUISIANA TECH
UNIVERSITY



How To Use This Bulletin

The bulletin is divided into four basic sections as follows:

General Information. This section contains information that is non-curricular in nature, but important to the university student. In it you will find information on: history of the University, accreditation, admissions and registration, expenses, academic regulations, student life and other types of information.

Academic Programs. The major academic divisions of the University are described in this section. Descriptions include programs offered, degree requirements, departmental divisions, and curricula requirements. The primary divisions within this section are:

Division of Admissions, Basic and Career Studies
Department of Air Force Aerospace Studies
College of Administration and Business
College of Applied and Natural Sciences
College of Education
College of Engineering and Science
College of Liberal Arts
The Graduate School

Courses of Instruction. An alphabetical listing of courses is given with description, laboratory-lecture requirements, and semester credit hour value for all undergraduate and graduate courses offered.

University Personnel. An alphabetical listing for the following groups: faculty, administrators, councils, committees, and commissions is presented.

LOUISIANA

TECH

UNIVERSITY

Daniel D. Reneau

President

UNIVERSITY BULLETIN
2002-2003

http://www.latech.edu

Louisiana Tech University Subscribes
To The Policy of Equal Opportunity

Volume MMII
Louisiana Tech University is a member of the University of Louisiana System.

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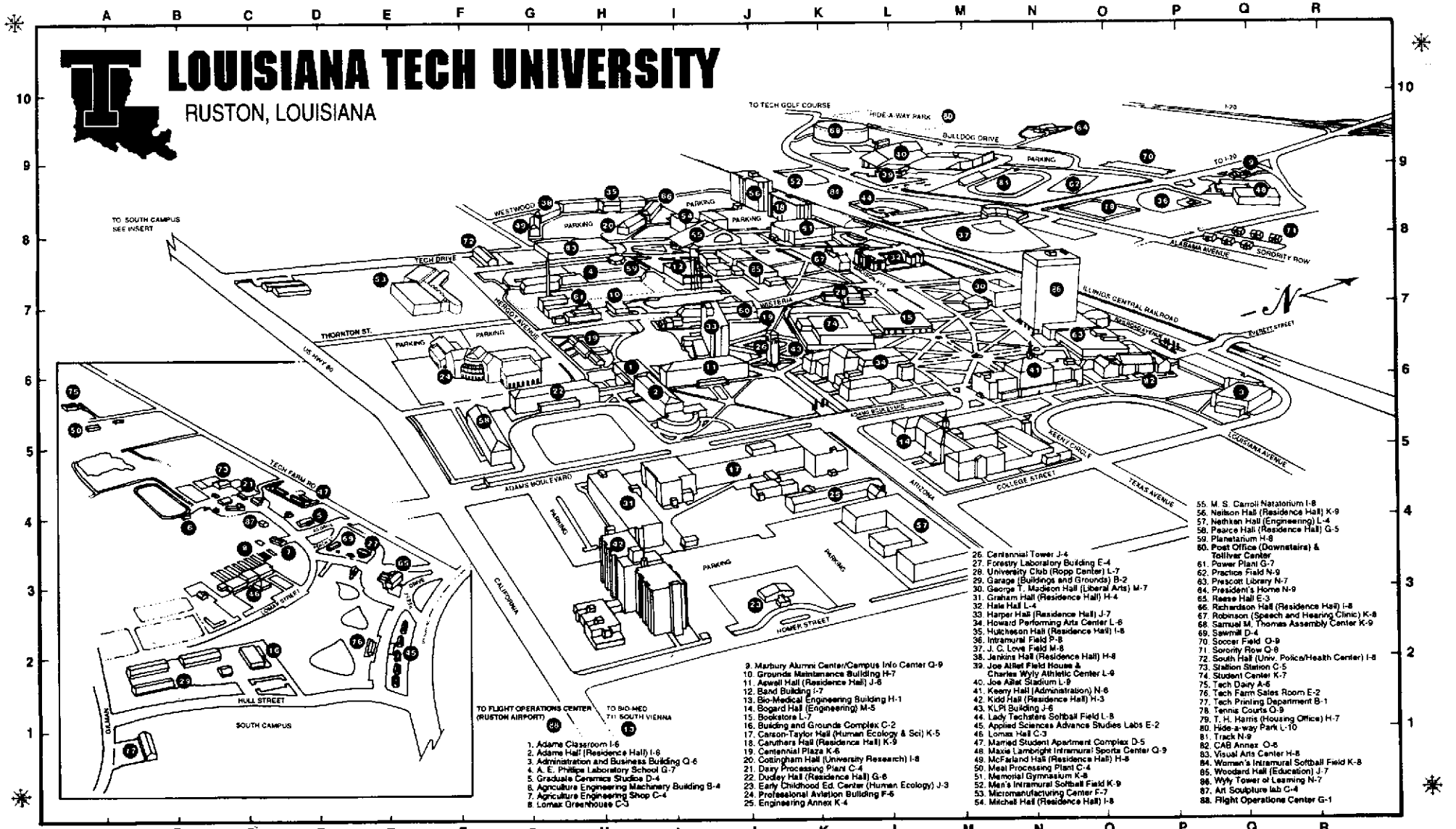
LOUISIANA TECH UNIVERSITY
RUSTON, LOUISIANA
TO TECH GOLF COURSE
HIDE-A-WAY PARK
BULLDOG DRIVE
PARKING
TO I-20
I-20
TO SOUTH CAMPUS SEE INSERT
WESTWOOD
TECH DRIVE
THORNTON ST.
US HWY 80
WISTERIA
ALABAMA AVENUE
SORORITY ROW
ILLINOIS CENTRAL RAILROAD
EVERETT STREET
MAGNOLIA
ADAMS BOULEVARD
COLLEGE STREET
TEXAS AVENUE
LOUISIANA AVENUE
ARIZONA
CALIFORNIA
HOMER STREET
TECH FARM RD
HULL STREET
SOUTH CAMPUS
DEAN
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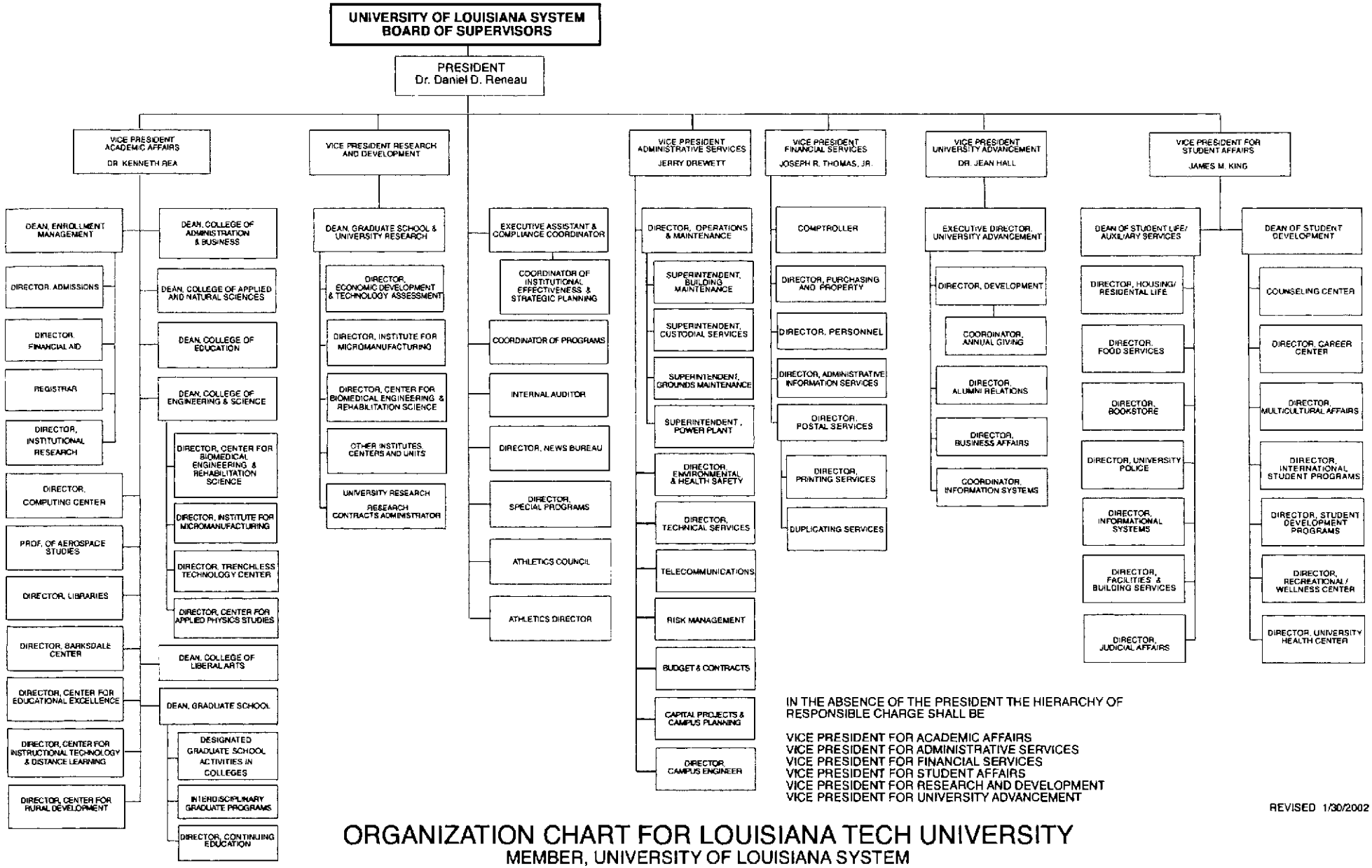

IN THE ABSENCE OF THE PRESIDENT THE HIERARCHY OF RESPONSIBLE CHARGE SHALL BE

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VICE PRESIDENT FOR ADMINISTRATIVE SERVICES
VICE PRESIDENT FOR FINANCIAL SERVICES
VICE PRESIDENT FOR STUDENT AFFAIRS
VICE PRESIDENT FOR RESEARCH AND DEVELOPMENT
VICE PRESIDENT FOR UNIVERSITY ADVANCEMENT

REVISED 1/30/2002

ORGANIZATION CHART FOR LOUISIANA TECH UNIVERSITY

MEMBER, UNIVERSITY OF LOUISIANA SYSTEM

University Calendar

Academic Year 2002-2003

Summer Quarter 2002

March	1	Friday	International Admissions: completed applications & transcripts due for new International Students.
May	1	Wednesday	Graduate Admissions: completed applications & transcripts due in Graduate School Office for all new Graduate Students.
	1	Wednesday	Undergraduate Admissions: completed applications for admission or readmission due in Admissions Office.
	29	Wednesday	Summer Quarter begins.
	29	Wednesday	Registration for all students who have not early registered and fee payment.
	30	Thursday	Classes begin.
July	3	Wednesday	First Summer Session ends.
	3	Wednesday	Fourth of July holiday begins at the end of classes.
	8	Monday	Fourth of July holiday ends, 7:30 a.m.
	8	Monday	Second Summer Session begins.
August	9	Friday	Last day of classes
	15	Thursday	Commencement Exercises - 2:00 p.m., Thomas Assembly Center
	15	Thursday	Summer Quarter ends.

Fall Quarter 2002

June	1	Saturday	International Admissions: completed applications & transcripts due for new International Students.
	1	Saturday	Graduate Admissions: completed applications & transcripts due in Graduate School Office for all new Graduate Students.
August	1	Thursday	Undergraduate Admissions: completed applications for admission or readmission due in Admissions Office.
September	4	Wednesday	Fall Quarter begins.
	4-5	Wed.-Thurs.	Registration for all students who have not early registered and fee payment.
	6	Friday	Classes begin.
November	19	Thursday	Last day of classes.
	22	Friday	Commencement Exercises - 2:00 p.m., Thomas Assembly Center
	22	Friday	Fall Quarter ends.

Winter Quarter 2003

September	1	Sunday	International Admissions: completed applications & transcripts due for new International Students.
	1	Sunday	Graduate Admissions: completed applications & transcripts due in Graduate School Office for all new Graduate Students.
November	1	Friday	Undergraduate Admissions: completed applications for admission or readmission due in Admissions Office.
December	3	Tuesday	Winter Quarter begins.
	3	Tuesday	Registration for all students who have not early registered and fee payment.
	4	Wednesday	Classes begin.
December	20	Friday	Christmas holiday begins at end of classes.
January 2003	6	Monday	Christmas holiday ends. Classes resume at 8:00 a.m.
	20	Monday	Martin Luther King, Jr. holiday - all offices closed.
February	27	Thursday	Last day of classes.
March	1	Saturday	Commencement Exercises - 2:00 p.m., Thomas Assembly Center
	1	Saturday	Winter Quarter ends.

Spring Quarter 2003

December 2002	1	Sunday	International Admissions: completed applications & transcripts due for new International Students.
	1	Sunday	Graduate Admissions: completed applications & transcripts due in Graduate School Office for all new Graduate Students.
February 2003	1	Saturday	Undergraduate Admissions: completed applications for admission or readmission due in Admissions Office.
March	11	Tuesday	Spring Quarter begins.
	11	Tuesday	Registration for all students who have not early registered and fee payment.
	12	Wednesday	Classes begin.
April	17	Thursday	Easter holiday begins at end of classes.
	21	Monday	Easter holiday ends.
May	23	Friday	Last day of classes.
	24	Saturday	Commencement Exercises - 2:00 p.m., Thomas Assembly Center
	24	Saturday	Spring Quarter ends.

Directory

Officers of the Administration

Daniel D. Reneau, B.S., M.S., Ph.D.(1967) ..... President and Professor
Kenneth W. Rea, B.A., M.A., Ph.D. (1968) ..... Vice President for Academic Affairs
Owen Jean Hall, B.A., M.A., Ed.D. (1988) ..... Vice President for University Advancement
James M. King, B.S., M.A. (1985) ..... Vice President for Student Affairs
Jerry S. Drewett, B.S., M.B.A. (1972) ..... Vice President & Business Manager for Administrative Services
Joseph R. Thomas, B.S., M.B.A. (1973) ..... Vice President & Comptroller for Financial Services

Gene H. Johnson, B.B.A., M.S., Ph.D. (1990) ..... Dean, College of Administration and Business
Shirley P. Reagan, B.S., M.S., Ph.D. (1970) ..... Dean, College of Applied and Natural Sciences
Jo Ann Dauzat, B.A., M.A., Ed.S., Ed.D. (1991) ..... Dean, College of Education
Leslie K. Guice, B.A., M.S., Ph.D. (1977) ..... Dean, College of Engineering and Science
Edward C. Jacobs, B.A., M.A., Ph. D. (1971) ..... Dean, College of Liberal Arts
Terry M. McConathy, B.A., M.A., Ph.D. (1990) ..... Dean, Graduate School and University Research

Whom to Contact at Louisiana Tech For:

Academic Records, Transcripts ..... Office of the Registrar
Registration, and Veterans Information
318/257-2176
registrar@latech.edu

Admissions (Undergraduate) ..... Division of Admissions, Basic/Career Studies
Orientation, High School Relations, and Scholarships
318/257-3036
BULLDOG@latech.edu

Admissions (Graduate) ..... The Graduate School
318/257-2924
gschool@latech.edu

Continuing Education ..... Division of Continuing Education
318/257-4433
www.latech.edu/ce

Disabled Student Services ..... Disabled Student Services Office
Wyly Tower Room 319
318/257-3036
malex@latech.edu

Dormitories and Student Housing ..... Housing Office
318/257-4917
US40861@latech.edu

Fees and Business Matters ..... Office of the Comptroller
318/257-4325
TUITION@latech.edu

Financial Aid (Grants, Loans, and Work-Study) ..... Division of Student Financial Aid
318/257-2641
TECHAID@ltfa.latech.edu

International Student Affairs ..... International Student Office
318/257-4321
iso@latech.edu

Career Center ..... Director of Career Center
318/257-4336
CAREERCENTER@latech.edu

Student Activities and Services ..... Student Center
318/257-3479
bmorales@latech.edu

Louisiana
Board of Regents' Mission Statement
for
Louisiana Tech University

Louisiana Tech University recognizes its threefold obligations: to advance that state of knowledge, to disseminate knowledge, and to provide strong outreach and service programs and activities. To fulfill its obligation to advance the state of knowledge, the University will maintain a strong research and creative environment. It will fulfill its obligation to disseminate knowledge by maintaining an intellectual environment that encourages the development and application of that knowledge. Recognizing that service is an important function of every university, Louisiana Tech will continue to provide outreach programs and activities to meet the needs of the region and the state.

Graduate study and research are integral to the University's purpose. Doctoral programs will continue to focus on fields of study in which Louisiana Tech has the ability to achieve national competitiveness or to respond to specific state or regional needs.

Louisiana Tech is categorized as an SREB Four-Year 3 institution, as a Carnegie Doctoral/Research University – Intensive, and as a COC/SACS Level VI institution. Louisiana Tech is committed to graduate education through the doctorate. It will conduct reseravh appropriate to the level of academic programs offered and will have a define ratio of undergraduate to graduate enrollment. Louisiana Tech will not offer associate degree programs. At a minimum, the University will implement Selective II admissions criteria. Louisiana Tech is located in Region VII.

Source: Board of Regents, State of Louisiana, Master Plan for Public Postsecondary Education 2001.

Mission
Louisiana Tech University

Mission

Louisiana Tech University is a comprehensive public university committed to quality in teaching, in research and creative activity, and in public service. A selective admissions university, it offers a broad range of fully accredited undergraduate degrees to qualified students in Louisiana, as well as from the region, the nation, and foreign countries. Integral to the purpose of the University is its expanding commitment to graduate-level education in its areas of strength; Louisiana Tech offers master's degrees in a variety of areas and doctoral programs in areas of specified expertise.

Louisiana Tech maintains, as its highest priority, the education of its students. To that end, it recruits a faculty committed to teaching and advising, a student-oriented faculty dedicated to preparing students to achieve their goals in a rapidly changing economic and civic environment. The University provides, in a challenging, yet safe and supportive environment, extra-curricular and athletic programs that foster and enrich the development of its students. In addition, it provides opportunities for interaction between students and the larger business and civic community. The University encourages its students to regard learning as a lifelong process.

Recognizing that research and service are fundamental to its mission, Louisiana Tech recruits and retains a faculty who see research and teaching as intertwined and complementary and who, through both theoretical and applied research and creative activities, contribute to the development of new knowledge, new art, and new technology.

Louisiana Tech University understands its community and civic obligations. Through on-campus learning, through its off-campus presence, through outreach programs and continuing education, the University will continue to enhance the quality of life and the economic development of the region, state, and nation.

As a university with a rich engineering heritage, Louisiana Tech has a special responsibility to integrate advanced technology into teaching and learning. At Tech, advanced technology supports quality teaching, research, administration, and service. The University is committed to providing its students with the advanced technological skills that will help to ensure their success both in the internal environment of the University and in the wider surrounding community.

Strategic Plan

2001-2002 to 2005-2006

Goal 1: Increase opportunities for student access and success.

Goal 2: Ensure quality and accountability.

Goal 3: Enhance service to the community and state.

Intercollegiate Athletics
Statement Of Purpose
(Mission Statement)

Louisiana Tech University is committed to an intercollegiate athletics program that embodies academic, athletic, and financial integrity. This constancy must be manifested primarily in an athletics program that is always in concert with the overall mission of the University and complements the values and goals of higher education. As a part of the total educational process at Tech, the intercollegiate athletics program should bring pride, admiration, and loyalty to the University. In this context, the Louisiana Tech University intercollegiate athletics program will benefit the student body, alumni, faculty, staff, and local community through the development of esprit de corps. The soundness of the athletics program must be evident in a commitment to enhance the educational growth and development of student-athletes and to abide by the letter and spirit of the rules and regulations set forth by the National Collegiate Athletic Association and the Western Athletic Conference.

Specific goals of the Louisiana Tech University intercollegiate athletics program include the following:

1. To conduct the athletics program in harmony with the educational goals, values, practices, and missions of Louisiana Tech University.

2. To look to the President of the University for authority and direction in the administration of the athletics program.

3. To seek the intellectual and vocational development of student-athletes and to enable them to meet the demands of academic competition successfully with the assistance of an academic support program.

4. To provide all student-athletes equal opportunity to pursue academic and athletics excellence.

5. To recruit student-athletes who have demonstrated the academic ability to be successful in college.

6. To allow student-athletes to participate in athletics only when they are able to demonstrate satisfactory progress toward a degree as outlined in the standards set forth by the NCAA and University academic policies.

7. To provide student-athletes the assurance that their education is of the utmost importance and to confirm that unsatisfactory academic achievement shall be neither accepted nor excused.

8. To strive for success at the conference, regional, and national levels in all athletics programs whenever possible.

9. To maintain a coaching staff who represent the best in athletic instruction; who possess the ability to motivate and inspire the student-athletes in their charge; and who are selected without regard to their race, color, creed, sex, age, handicap, or national origin.

10. To always conduct the business of intercollegiate athletics in such a manner as to reflect pride and integrity for the University, alumni, and community, and to ensure that intercollegiate athletics will be an honorable tradition at Louisiana Tech University and in North Louisiana.

11. To envision increased external funding, improved graduation rates for all student-athletes, enhanced academic services for all student-athletes, increased life-skills education opportunities for all student-athletes, and the continuation of programs toward achieving gender equity in athletics.

UNDERGRADUATE
MAJORS AND CONCENTRATIONS

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION WITHIN THE MAJOR	DEGREE
College of Administration and Business			
Professional Accountancy, School of	Accounting		Bachelor of Science
Computer Information Systems and Analysis	Business Administration		Bachelor of Science
	Computer Information Systems		Bachelor of Science
Economics & Finance	Business Economics		Bachelor of Science
	Finance		Bachelor of Science
Management & Marketing	Management/Business Management Entrepreneurship		Bachelor of Science
	Management/Human Resources Management		Bachelor of Science
	Marketing		Bachelor of Science
College of Applied and Natural Sciences			
Interdisciplinary	Environmental Science		Bachelor of Science
Agricultural Sciences	Agribusiness		Bachelor of Science
	Animal Science		Bachelor of Science
		Dairy Processing Dairy Production Equine Science General Animal Science Livestock Production Pre-Veterinary Medicine	
	Plant Sciences		Bachelor of Science
		Agronomy Horticulture	
Biological Sciences, School of	Biology		Bachelor of Science
		Animal Biology Applied Biology Cell & Molecular Biology Microbiology Plant Biology Pre-Dentistry* Pre-Medicine* Pre-Physical Therapy *	
	Medical Technology		Bachelor of Science
Forestry, School of	Forestry		Bachelor of Science in Forestry
	Wildlife Conservation		Bachelor of Science
Health Information Management	Health Information Administration		Bachelor of Science
	Health Information Technology		Associate of Science

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION WITHIN THE MAJOR	DEGREE
Human Ecology, School of	Merchandising & Consumer Affairs		Bachelor of Arts
		Consumer Affairs Merchandising	
	Family and Child Studies		Bachelor of Science
		Applied Child Development Child Life Early Childhood Education Family Sciences Family & Consumer Sciences Education	
	Nutrition & Dietetics		Bachelor of Science
Nursing, Division of	Nursing (RN Program)		Associate of Science
College of Education			
Psychology & Behavioral Sciences	Psychology		Bachelor of Arts
Health & Physical Education	Health & Physical Education		Bachelor of Science
	Health & Physical Education--Fitness/Wellness		Bachelor of Science
		Clinical Pre-Physical Therapy* Health Fitness	
Curriculum, Instruction & Leadership	Art Education		Bachelor of Arts
	Elementary Education		Bachelor of Science
		Preschool - Grade 3 Grades 1-6 Middle Grades 4-8 Library Science	
	Health & Physical Education		Bachelor of Science
	Music Education		Bachelor of Arts
		Instrumental Vocal	
	Secondary Education		Bachelor of Science
		Agriculture Education Business Education English Education French Education Mathematics Education Science Education Social Studies Education Speech Education	
	Special Education		Bachelor of Arts
	Speech Language, Hearing Therapy		Bachelor of Arts

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION WITHIN THE MAJOR	DEGREE
College of Engineering and Science			
Biomedical Engineering	Biomedical Engineering		Bachelor of Science
		Pre-Dentistry* Pre-Medicine*	
Chemical Engineering	Chemical Engineering		Bachelor of Science
Chemistry	Chemistry		Bachelor of Science
		Pre-Dentistry* Pre-Medicine*	
Civil Engineering	Civil Engineering		Bachelor of Science
	Construction Engineering Technology		Bachelor of Science
Computer Science	Computer Science		Bachelor of Science
Electrical Engineering	Electrical Engineering		Bachelor of Science
	Electrical Engineering Technology		Bachelor of Science
Geology	Geology		Bachelor of Science
Industrial Engineering	Industrial Engineering		Bachelor of Science
Mathematics & Statistics	Mathematics		Bachelor of Science
Mechanical Engineering	Mechanical Engineering		Bachelor of Science
Physics	Physics		Bachelor of Science
College of Liberal Arts	General Studies		Associate of General Studies
	General Studies		Bachelor of General Studies
Architecture, School of	Architecture (5-yr.)		Bachelor of Architecture
	Interior Design		Bachelor of Interior Design
Art, School of	Art-Graphic Design		Bachelor of Fine Arts
	Art-Photography		Bachelor of Fine Arts
	Art-Studio		Bachelor of Fine Arts
History	History		Bachelor of Arts
Journalism	Journalism		Bachelor of Arts
Literature and Language, School of	English		Bachelor of Arts
		Technical Writing	
	French		Bachelor of Arts
	Spanish		Bachelor of Arts

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION WITHIN THE MAJOR	DEGREE
Performing Arts, School of	Music Performance		Bachelor of Music
	Music		Bachelor of Arts
	Theatre (see Speech Department)		
Professional Aviation	Professional Aviation		Bachelor of Science
	Aviation Management		Bachelor of Science
Social Sciences	Geography		Bachelor of Arts
	Political Science		Bachelor of Arts
		Pre-Law	
	Sociology		Bachelor of Arts
Speech	Speech		Bachelor of Arts
		Speech Communication Theatre	
	Preprofessional Speech-Language Pathology		Bachelor of Arts

*Pre-Dental and Pre-Medical requirements may be met through the curricula of each of the following departments: Biological Sciences, Biomedical Engineering, and Chemistry. The Pre-Physical Therapy requirements may be met through the curricula of both the Biological Sciences Department and the Health and Physical Education Department (Fitness/Wellness - Clinical Concentration).

GRADUATE DEGREES

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION	DEGREE
Graduate School	Computational Analysis and Modeling		Doctor of Philosophy (Ph.D.)
College of Administration and Business	Business Administration		Doctor of Business Administration (DBA)
		Accounting Finance Management Marketing Quantitative Analysis	
	Business Administration		Master of Business Administration (MBA)
		Accounting Economics Finance General Business Management Marketing Quantitative Analysis	
Professional Accountancy, School of	Accounting		Master of Professional Accountancy (MPA)
College of Applied and Natural Sciences			
Biological Sciences	Biology		Master of Science
Human Ecology, School of	Family and Consumer Sciences		Master of Science
		Early Childhood Administration Early Childhood Education Family & Child Development Family & Consumer Sciences Education Human Ecology	
	Nutrition and Dietetics		Master of Science
		Clinical Dietetics Community Dietetics	
College of Education			
Psychology & Behavioral Sciences	Counseling Psychology		Doctor of Philosophy (Ph.D.)
	Counseling and Guidance		Master of Arts
		General Counseling School Counseling	
	Educational Psychology	Educational Diagnostician Educational Psychology Research Gifted/Talented Mild/Moderate Orientation & Mobility	Master of Arts
	Industrial/Organizational Psychology		Master of Arts

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION	DEGREE
Health & Physical Education	Health & Physical Education		Master of Science
		Adapted Physical Education Exercise Science Sports Science Teacher Preparation	
Curriculum, Instruction & Leadership	Curriculum & Instruction		Doctor of Education (Ed.D.)
			Master of Science
	Educational Leadership		Doctor of Education (Ed.D.)
	Education		Master of Education (5th-Year Program) with Initial Certification
		Art Education Business Education Elementary Education English Education Foreign Language Education Health & Physical Education Mathematics Education Music Education Science Education Social Studies Education Special Education Speech Education Vocational Agricultural Education	
College of Engineering and Science			
Interdisciplinary Program	Computational Analysis and Modeling		Doctor of Philosophy (Ph.D.)
Interdisciplinary Program (All engineering areas except Biomedical Engineering)	Engineering	Research oriented	Doctor of Philosophy (Ph.D.)
Biomedical Engineering	Biomedical Engineering		Doctor of Philosophy (Ph.D.)
			Joint MD/Ph.D. program with LSU Medical Center, Shreveport, LA is available in conjunction with the Ph.D. in Biomedical Engineering
	Engineering	Biomedical Engineering	Master of Science
Interdisciplinary	Engineering Management		Master of Science
Interdisciplinary	Manufacturing Systems Engineering		Master of Science
Interdisciplinary	Engineering		Master of Science
		Chemical Engineering Civil Engineering Electrical Engineering Industrial Engineering Mechanical Engineering	
Chemistry	Chemistry		Master of Science
Computer Science	Computer Science		Master of Science

DEPARTMENT (UNIT)	MAJOR	CONCENTRATION	DEGREE
Mathematics & Statistics	Mathematics		Master of Science
Physics	Physics		Master of Science
College of Liberal Arts			
Architecture, School of	Art		Master of Fine Arts
		Interior Design	
Art, School of	Art		Master of Fine Arts
		Graphic Design Photography Studio	
English	English		Master of Arts
History	History		Master of Arts
Speech	Speech		Master of Arts
		Speech Communication Theatre	
	Speech-Language Pathology & Audiology		Master of Arts
		Speech-Language Pathology Audiology	

Accreditation

Louisiana Tech University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097); telephone number (404/679-4501) to award associate, baccalaureate, master's, and doctoral degrees.

Member

American Association of Colleges for Teacher Education
American Association of Collegiate Registrars and Admissions Officers (AACRAO)
American Association of State Colleges and Universities
American Council on Education (ACE)
Association for University Business and Economics Research
Conference of Southern Graduate Schools
Council on International Education Exchange
Institute of International Education
National Association of State Universities and Land-Grant Colleges
National Association of Student Financial Aid Administrators (NASFAA)
Southeastern Universities Research Association, Inc.
Southern Association of Collegiate Registrars and Admissions Officers (SACRAO)

Affiliation

National Commission on Accrediting
National Council of University Research Administrators

Accreditation in Specific Areas

Accreditation Board of Engineering and Technology (ABET)
American Chemical Society
American Dietetics Association
The Association to Advance Collegiate Schools of Business (AACSB)
Commission on Accreditation of Allied Health Education Programs in cooperation with the Council on Accreditation of the American Health Information Management Association
Commission on Accreditation/Approval for Dietetics Education of The American Dietetic Association
Computing Accreditation Commission (CAC of ABET)
Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association
The Council for Accreditation of the American Association of Family and Consumer Sciences
Council on Aviation Accreditation
Engineering Accreditation Commission of ABET (engineering programs)
Foundation for Interior Design Education Research (FIDER)
International Association for Management Education (AACSB)
National Academy of Early Childhood Programs Division of the National Association for Education of Young Children (NAEYC)
National Architectural Accrediting Board
National Association of Schools of Art and Design (NASAD)
National Association of Schools of Music (NASM)
National Council for Accreditation of Teacher Education
National League for Nursing
Society of American Foresters
Technology Accreditation Commission of ABET (technology programs)

General Information

History

Tech's formal name is Louisiana Tech University, but, when it was founded in 1894 by Act 68 of the General Assembly, it was called Industrial Institute and College of Louisiana. Act 68, which specified that the school be located in Ruston, provided for the establishment of "a first-class" institution designed to educate citizens of the state in the arts and sciences and in "the practical industries of the age." The school was located on 20 acres of land and in a single building, both donated by the city of Ruston. By September 1895, with its president and faculty of six in residence, Tech opened its door to 202 students.

The first degree offered by the school was a "Bachelor of Industry." This degree was granted in fields as broadly diverse as music and telegraphy. The first student to receive the degree was Harry Howard, Class of 1897. Mr. Howard was not required to go through a formal graduation program. After his qualifications were examined, Col. A. T. Prescott, the school's first president, awarded the degree. The first graduation exercises were not held until the following year, 1898, when ten degrees were awarded in a ceremony at the Ruston Opera House. There was a total of 1,346 Bachelor of Industry degrees awarded.

Since 1894, the institution's name, purpose, and functions have been modified as the needs of those whom it served have changed. In 1921, the school's name was changed to Louisiana Polytechnic Institute. The Bachelor of Industry degree was discarded, and the degrees standard to American education were granted. As the college increased in enrollment and offerings, constant changes were made to meet those additional responsibilities; in 1970, the school's name was changed to Louisiana Tech University.

Since 1921, the University has prospered. Enrollment approximates 10,000 students, and the physical plant has grown to over 130 buildings. There are approximately 260 acres on the main campus, 472 acres at the demonstration farm, 94 acres of forest land in Webster parish, 200 acres of forest land in Winn Parish, about 170 acres a few miles west of Ruston, five acres on Lake D'Arbonne, and 43.7 acres two miles west of the main campus. In addition, Tech has 149.77 acres of farm and pasture land for the animal production units.

The focal point of the campus is the Quadrangle, the center of which is a granite fountain named "The Lady of the Mist." Prescott Memorial Library (named for the school's first president), Wyly Tower of Learning, and Madison Hall are at the north end of the Quadrangle. Keeny Hall (after the school's sixth president) is at the east side; Howard Center for the Performing Arts (for Tech's first graduate) is at the south side. The west side is the Student Center. The remaining buildings surround the core buildings around the Quadrangle.

The Centennial Plaza was constructed in 1995 and funded by student-assessed fees. The focal points of the Plaza area are the belltower and the alumni walkway made up of approximately 72,000 engraved bricks representing all Tech graduates.

Equal Opportunity Policies

Louisiana Tech University adheres to the equal opportunity provisions of federal civil rights laws and regulations that are applicable to this agency. Therefore, no one will be discriminated against on the basis of race, color, national origin, age (Title VII of the Civil Rights Act of 1964), sex (Title IX of the Education Amendments of 1972), or disability (Section 504 of the Rehabilitation Act of 1973, as amended); the American with Disabilities Act of 1990, and the Civil Rights Act of 1991 in the pursuit of educational goals and objectives and in the administration of personnel policies and procedures.

Admissions

Louisiana Tech University assures equal opportunity for all qualified persons regardless of race, creed, sex, color, religion, physical or mental handicap, national origin, age, marital status, or veteran's status in admission to the University.

Disabled Student Services

The Office of Disabled Student Services (Wyly Tower 319) coordinates campus-wide efforts to provide information and services to Louisiana Tech students with disabilities. Inquiries concerning services for students with disabilities should be directed to the Office of Disabled Student Services, the Admissions Office, or the Office of Academic Affairs. Services are available to students who provide appropriate documentation to the Office of Disabled Student Services. Any student with a documented disability condition (e.g., physical, learning, psychiatric, vision, hearing, etc.) requesting classroom accommodations should contact the instructor(s) and the Office of Disabled Student Services at the beginning of each quarter.

Employment

Louisiana Tech University is committed to the principle of providing the opportunity for learning and development of all qualified citizens without regard to race, sex, religion, color, national origin, age, disability, marital status, veteran's status for admission to, participation in, or employment in the programs and activities which the University sponsors or operates. The President of the University has established the policy that all employment practices will be supervised on a continuous basis to ensure that all University administrators, deans, directors, department heads, and other budget unit heads take positive action in complying with the goals of equal employment opportunity.

Office of Student Financial Aid

The Office of Student Financial Aid makes every effort to assist all students who require financial assistance to pursue their college career. The Office of Student Financial Aid is dedicated to the principle that any student who desires a college education should not be denied that opportunity because of lack of funds necessary to meet college costs.

Family Educational Rights and Privacy Act (FERPA)

The following statement is issued in compliance with the Family Educational Rights and Privacy Act of 1974:

Louisiana Tech University has the responsibility for effectively supervising any access to and/or release of official information about its students. Certain items of information about individual students are fundamental to the educational process and must be recorded. This recorded information concerning students must be used only for clearly defined purposes, must be safeguarded and controlled to avoid violations of personal privacy, and must be appropriately disposed of when the justification for its retention no longer exists. In this regard,

Louisiana Tech University is committed to protecting to the maximum extent possible the right of privacy of all the individuals about whom it holds information, records, and files. Access to and release of such records is restricted to the student concerned, to others with the student's written consent, to officials within the school, to a court of competent jurisdiction, and otherwise pursuant to law.

Message to Students

NOTICE: The regulations contained in this bulletin are based upon present and foreseen conditions and the university reserves the right to modify any statement in accordance with unforeseen conditions.

Louisiana Tech University is committed to providing a quality educational experience for students both within and outside the classroom. A high degree of interaction among students, faculty, and the University community is desired. Students provide an important voice in University decision making. The large number of committees having student members is an indicator of the importance of the students' role in decision making. Some of the committees having student members are as follows: Administrative Council, Administrative Review Board, Athletics Council, Behavioral Standards Committee, College/Department Curriculum Committees, Fee Committee, Graduate Council, Instructional Policies Committee, Library Advisory Committee, Parking and Traffic Committee, Radiation Committee, Research Council, Student Organizations Committee, University Multicultural Committee, University Student Health Council, and University Tour Committee.

Louisiana Tech University is required by accrediting agencies to evaluate the effectiveness of its academic programs and student services. Student participation is required through opinion surveys and standardized tests; e.g., student opinion survey, alumni survey, standardized test for general education, standardized test for major field evaluation, etc.

Student Residence Regulations

Because residence classification is an important part of fee determination, admission regulations, and other policies of the colleges and universities, it is important that colleges and universities have fair and equitable regulations which can be administered consistently, respecting the interest of both the students and the taxpayers of Louisiana. It is the responsibility of the student to provide the colleges and universities with such evidence as deemed necessary to establish the student's residence status.

The residence status of an applicant or student is determined in accordance with the University of Louisiana System regulations and is based upon evidence provided in the application for admission and related documents. Residence status is determined by the Admissions Officer after the completed application for admission has been submitted. The regulations are based primarily on the location of the home and the place of employment. Residence status may not be acquired by an applicant or student while residing in Louisiana for the primary purpose of attending school. Residence status is not determined for students registered for six (6) semester hours or less.

1. An applicant living with his/her parents is classified as a resident if the parents have established a bona fide residence in Louisiana. Ordinarily, a parent is considered to have established a residence in Louisiana if the parent actually resides and is employed full-time in the state. A parent who is unable to be employed or who is a house-spouse may be considered to have established a residence in Louisiana if there is convincing evidence that the parent continuously resides in Louisiana. If only one parent qualifies as a resident of Louisiana, the student shall be classified as a resident provided that the student resides with the parent who is a resident of Louisiana. An individual who resides in Louisiana and is employed full-time in another state may be classified as a resident. In such cases, appropriate documentary evidence must be presented.
2. A student residing with his/her parents who enrolls as a nonresident is classified as a resident if his/her parents move to Louisiana and acquire residence as defined in these regulations.
3. A student may be declared a resident if either parent is a graduate of the institution which he/she attends. A student who graduates with an associate or higher degree may be classified as a resident for subsequent enrollment at that same institution. This condition applies only to U.S. citizens.
4. A person may be classified as a resident of Louisiana at the end of twelve consecutive months of residence if he/she has been employed full time in Louisiana, and if during that period he/she has not been registered at Louisiana Tech University for more than three semester hours or its equivalent in any quarter (this number of semester hours could be six per semester at other educational institutions in Louisiana). A person who is unable to be employed and has not been registered in any educational institution for more than six semester hours, or its equivalent in any semester (three semester hours at Louisiana Tech University) may acquire residence in Louisiana.
5. A student who is married to a Louisiana resident may acquire the residence status of his or her spouse.
6. A person who resides in Louisiana for at least two years, exclusive of military service, and then moves to another state or foreign country retains the right to enroll as a resident (including dependents) for a period equal to the number of years residing in Louisiana. The right shall expire upon the person's residing for a period of two years in another state or foreign country.
7. A member of the Armed Forces currently stationed in Louisiana and his/her dependents shall be classified as Louisiana residents. Service personnel who were stationed in Louisiana immediately prior to their release from active duty may enroll as Louisiana residents (including dependents), during a period not to exceed six months after the date of release provided that their term of active duty shall have been not less than 12 consecutive months.
8. A member of the Armed Forces who was a resident of Louisiana immediately prior to entering the Armed Forces retains the right for him/her or any of his/her dependents to be classified as a resident as long as he/she is in the Armed Forces and for a two-year period after leaving the Armed Forces.
9. A resident of Louisiana does not lose the right to be classified as a resident during periods of employment in a foreign country.
10. An alien who has been lawfully admitted to the United States for permanent residence as an immigrant (proof of such status in his/her possession of two valid forms: I-151-Alien Registration Receipt Card or passport stamp evidencing temporary Alien Registration Receipt Card) and he/she has established residence under any of the foregoing provisions shall be declared a resident of the state.

Appeals Committee

Any student classified as a nonresident may appeal his/her classification to Louisiana Tech University's Appeals Committee. An appeal form may be obtained from and submitted to the Admissions Office, Room 221, Wyly Tower.

If an appeal is approved it will become effective during the quarter in which the appeal is approved. If the appeal is the result of a mid-quarter change in status (e.g marriage), the appeal will become effective for the following quarter.

Undergraduate Admissions

Louisiana Tech University operates on a quarter calendar granting credit in semester hours. Qualified applicants may initiate their enrollment at the beginning of any quarter. Requests for information and application forms for undergraduate admission and readmission should be directed to:

Admissions Office, Box 3178
Ruston, LA 71272
or
Louisiana Tech University Web Site:
http://www.latech.edu

Application packets are routinely sent to students who have scores on the American College Test (ACT) or Scholastic Aptitude Test (SAT) sent to the University. Applications are also available at most high schools.

Arrangements for admission, housing, and need-based financial aid are made separately through the Admissions Office, Housing Office, and Financial Aid Office, respectively. Filing an application for admission does not entitle an applicant to University housing or financial aid; nor is the filing of a housing application, the assignment to a room, or the award of financial aid a commitment of admission to the University.

Applicants enrolled at the main campus must submit a medical history form prior to enrollment. A nonrefundable application fee of $20 must accompany the application for admission. International students should submit a $30 application fee. All persons previously banned for disciplinary reasons or misconduct or criminal activities cannot register without the specific approval of the Vice President for Student Affairs.

Admission Requirements and Procedures

All students are encouraged to apply for admission. Louisiana Tech University may admit students not meeting all stated requirements. In such cases, the admission decision will be affected by the student's potential for degree completion and the need to enhance the University's demographically diverse student population. Some factors to be considered may include age, experience, ethnic background, and creative talent.

All high school grade-point averages will be calculated by the Admissions Office under uniform policies on a 4.00 scale, considering only those courses which meet the University's course requirement. For scholarships, the University may take into consideration special designation on high school transcripts, such as honors and Advanced Placement courses.

Freshmen

Applicants for freshman admission and all applicants who have earned fewer than 24 semester hours of college credit must show proof of graduation from an accredited high school or have successfully completed the General Education Development Test (GED). Students who meet one of the following requirements may be admitted (effective Fall 2001):

1. High school grade point average of 2.3/4.00 (NOTE: 2.2/4.0 for students entering Summer 2002 or earlier) on the courses listed below. **OR**
2. High school rank in the upper 35 percent of the graduation class. **OR**
3. ACT composite of at least 22 or 1020 SAT.
4. No student with an ACT composite less than 15 will be admitted.

Home-Schooled Students must have a minimum ACT composite of 22 (SAT 1020), and a high school transcript documenting completion of high school work.

The following represent the high school courses normally required for admission:

Subjects	Units	
English	4	Courses emphasizing grammar, composition, & literature (English I, II, III, IV)
Mathematics	3	Two units of algebra; one unit of geometry or a higher level of math for which algebra is a prerequisite
Social Studies	3	One unit must be American history
Science	3	Chemistry, physics, & biology preferred
Electives	4 ½	Recommended from: foreign languages, social studies, science, math, speech, advanced fine arts, & computer literacy. No more than three elective units may be in vocational subjects.
TOTAL	17 ½	

Freshman applicants who intend to enroll in the Fall should apply by July 1 to be considered for priority enrollment and have ACT or SAT scores and high school transcripts on file. All freshmen are strongly encouraged to participate in the Orientation program. This program includes testing for placement, the opportunity to meet with a faculty advisor, and completion of registration for the Fall. Announcements of dates and other information are sent to admitted students.

Transfer Admission

Students desiring to transfer to Louisiana Tech University with fewer than 24 semester hours of college-level course work must meet the same requirements as an entering freshman and be eligible to re-enter the institution from which he/she is transferring. Students who have completed 24 or more semester hours of college-level course work must have a minimum overall grade point average of 2.0 (on a 4.0 scale). Students transferring must submit an application and a complete, official transcript from each college attended, whether credit was earned or transferrable. Transcripts must be mailed directly from the college/university to Louisiana Tech. Students who fail to acknowledge attendance at any college or university in which they have been registered are subject to having their admission canceled or, if enrolled, to being dismissed from Louisiana Tech University. Evaluations concerning probation, suspension, grades, grade point average, hours pursued, and hours earned are based on Tech standards regardless of prior determinations at the other institutions attended.

No student will be admitted if under scholastic or disciplinary suspension from another college or university. A suspended student will not be considered for admission until the time interval of suspension has elapsed; where such interval is not clearly defined, it will equal a period comparable to rules in place at Tech.

Provisional status may be granted prior to scheduled registration dates on an individual basis. Provisional status is

based on incomplete or unofficial transcripts, and, if the required transcripts are not received by the end of the first quarter, the student will not be permitted to attend subsequent quarters. When the required transcripts are submitted and if the student is determined to have been ineligible, no credit will be awarded for the initial quarter. No credit earned while under suspension from another institution will be accepted toward a degree at Tech. Official Louisiana Tech academic transcripts will not be provided to any student with incomplete admissions records.

Accreditation status of transfer institutions is confirmed through the publications Transfer Credit Practices of Designated Educational Institutions and Accredited Institutions of Postsecondary Education. Transfer course work is posted from official transcripts received directly from institutions accredited by the following associations:

- Middle States Association of Colleges and Schools
- Northwest Association of Schools and Colleges
- North Central Association of Colleges and Schools
- New England Association of Schools and Colleges,
- Inc./Commission on Institutions of Higher Education
- Southern Association of Colleges and Schools/Commission on Colleges
- Western Association of Schools and Colleges

While all transfer course work is posted, the applicability of specific courses for the chosen curriculum is determined by the academic department head in conjunction with the college dean.

Tech computes the grade point average (GPA) on all courses attempted, including repeated courses, courses with incomplete grades, and those with any other grades, except grades of "W," "WA," "WB," "WC," "WD," and "No Credit." Under this system, a grade of "A" equals four quality points, "B" = three, "C" = two, "D" = one, and "F" = 0. The symbols "+" and "-" are disregarded.

A maximum of 68 semester hours from a junior college or community college may be applied toward a bachelor's degree at Louisiana Tech. Normally, only courses taught at the freshman/sophomore level at Louisiana Tech will be accepted from a junior/community college toward a degree at Louisiana Tech.

Early and Concurrent Admission

High school students may be considered for **Early Admission** to the University if the following requirements are met: an overall academic average of 3.0 ("B") or better on all work pursued during three years (six semesters) of high school; a minimum ACT composite score of 25 (1130 SAT V+M) submitted prior to June 1; and recommendation by the high school principal. The student may be enrolled full-time or part-time. Upon earning a minimum of 24 semester hours at the University, the student will be issued a diploma by the high school last attended.

A student may be eligible for **Concurrent Admission** to the University if the following requirements are met: an overall academic average of 3.0 ("B") or better on all subjects taken during the previous two years; a preferred ACT composite score of 22 (1020 SAT V+M) submitted to the University; and recommendation by the high school principal. The student may enroll in one University course per quarter. Upon admission to the University as a freshman, the credits earned in this program may be used to satisfy degree requirements.

Forms for these programs can be obtained through the Admissions Office.

Summer Enrichment Program for High School Students

The Summer Enrichment Program for high school students (SET-Summer Enrichment at Tech), designed to enable capable high school juniors to invest the summer between their junior and senior years wisely, has been in effect since 1964 with outstanding success. Special effort is exerted to choose courses that will not conflict with twelfth- grade high school courses.

Grades and credits will be recorded by the Registrar but will be validated to the student's transcript only after application for validation of the credits.

Anyone interested should write to SET, Box 3178, Louisiana Tech University, Ruston, Louisiana 71272.

Summer Scholars Program

Students with exceptional academic records may participate in Tech's **Summer Scholars Program**, which allows students who will be entering freshmen in the Fall to get an early start by enrolling in the Summer Quarter. Special scholarships are available for qualifying students.

Readmission Students

Applicants for readmission to Louisiana Tech must complete an application for admission when the student has not been enrolled for one or more quarters (except for the Summer Quarter).

Readmission students who have attended another college/university since they were last at Tech must submit an official transcript from each college/university. Transcripts must be mailed directly from the college/university to Louisiana Tech. If the required transcripts are not received by the end of the first readmitted quarter, the student will not be permitted to attend subsequent quarters. If the required transcripts are submitted and the student is determined to have been ineligible for readmission, no credit will be awarded for that quarter. Official Louisiana Tech academic transcripts will not be provided to any student with incomplete readmission records.

International Admission

All admitted students must have sufficient knowledge of the English language to benefit from a program of study. All undergraduates whose first language is not English must take the Test of English as a Foreign Language (TOEFL)). Undergraduate applicants who score 500 or more on the examination and who meet all other admission qualifications, may proceed with an academic program.

Applicants from foreign countries must meet the guidelines set forth in Louisiana Tech's "International Admission" publication. Please contact the Admissions Office for a copy.

Visiting/Special Admission

Admission under these criteria is for a particular program for one quarter. The student is not regularly admitted to the University nor approved to pursue a curriculum. No transcripts are required. Transferable credit will be awarded. If, at a future date, the student wishes to transfer to Louisiana Tech University, the regular admissions procedures and requirements must be followed.

Test Scores and Transcripts

Applicants must submit ACT or SAT scores or both. Although scores are self-reported on the application, official notice of receipt of scores must be received directly from the testing agency or on an official transcript from the high school.

Scholarship applicants must take the SAT or ACT at least by December of the senior year of high school.

High school and college transcripts must be official documents bearing the stamp or seal of the issuing institution. All high school transcripts should show a graduation date, grade point average, and rank in class. Freshman applicants may submit a six - or seven-semester transcript for admission and scholarship decision. A final transcript must be received prior to enrollment.

Spring Testing

Spring Testing is a two-day event held each spring for high school students who will be college freshmen in the following academic year and who wish to earn college credit by taking exams in certain subject areas. Tech credit exams are generally available for entry-level college courses in English, mathematics, foreign languages, and more.

Students wishing to take the English or mathematics exams must have earned minimum sub-scores on the ACT or SAT exam. Please refer to the English or mathematics sections of this Bulletin for more detailed information.

Invitations to Spring Testing are sent out each spring to students who qualify.

The Honors Program

Foundations 21

The Honors Program at Louisiana Tech University is designed to meet the needs of students of exceptional ability and motivation. Honors students may take special Honors classes which are usually small and taught by some of the best and most innovative faculty. Smaller classes and challenging professors provide greater interaction between students and faculty and among the students themselves. They also make it possible for professors and students to explore topics in greater depth or at a higher level of sophistication than in ordinary classes. In addition to special classes, Honors students enjoy a number of privileges including priority registration, designated housing, and access to Honors social, academic, and cultural events designed specifically for them.

Honors students may also work toward formal recognition of superior achievement in two ways. Honors students who complete the **Foundations 21** curriculum receive an **Honors Scholar** designation on their official academic transcript, an Honors Scholar certificate, and recognition for their achievement at graduation. Honors students may also receive **Senior Honors Scholar** designation by completing 9 semester hours of Honors classes at the 400-level, including a senior thesis.

Students entering Louisiana Tech as freshmen, who have a composite score of 26 on the ACT (or a comparable score on the SAT) and/or graduated in the top 10 % of their high school graduating class are invited to apply to the Honors Program. Students who do not meet these requirements but who wish to join the Honors Program will be considered on a a case-by-case basis. Continuing or transfer students above the classification of freshman may apply with a cumulative GPA of 3.3 or better.

For more information, contact: Dr. Donald P. Kaczvinsky, Director, The Honors Program, P. O. Box 10078, Louisiana Tech University, Ruston, Louisiana 71272.

Honors Curriculum

The Honors curriculum is called **Foundations 21** and comprises 12 semester hours from four interdisciplinary seminars—Foundations of Ancient, Medieval and Renaissance, Modern, and American Civilization. These seminars will be taken in the freshman and sophomore year and fulfill the General Education Requirements (GER) in History and English. The remaining 9 semester hours will be taken in designated honors courses from the remaining disciplines (Foreign Languages, Mathematics, Computer Literacy, Natural Sciences, Arts, and Social Sciences) for a total of 21 of the 45 semester hours of required GER courses needed for baccalaureate degree candidacy. Upon completion of the 21 hours students will receive an Honors designation on their academic transcript and an Honors Scholar Certificate.

Students may further take 6 hours of Honor work. These classes may also count within the student's major area of specialization with permission of the Department Head and the Director of the Honors Program. Students must receive at least a "B" grade if the seminar is to count for honors credit. After 6 hours, students will write a Senior Thesis (3 hours credit), supervised by an appropriate Honors faculty member in the student's area of specialization, which will qualify them as Senior Honors Scholars. When complete, Senior Honors status will be designated on the student's academic transcript

Foundations 21 Curriculum

Freshman: Ancient Civilization (3), Medieval and Renaissance Civilization (3), Seminars or designated honors classes (3). Total of 9 semester hours.
Sophomore: Modern Civilization (3), American Civilization (3), Seminars or designated honors classes (6). Total of 12 semester hours.
Senior: Designated Honors Seminars (300-400 level) (6), Senior Honors Thesis (3)

For more information, contact: Dr. Donald P. Kaczvinsky, Director, The Honors Program, P. O. Box 10078, Louisiana Tech University, Ruston, Louisiana 71272.

Louisiana Tech Immunization Policy

Louisiana state law (Act 1047), requires all new students born after December 31, 1956, to provide proof of immunization against MMR and Td. Forms for documenting immunization or establishing an exemption to this requirement are available from the Office of Admissions. Proof of immunity includes documentation of:

- two measles vaccines administered after January 1, 1968, one of which must have given on or after the first birthday.
- a mumps and rubella vaccine.
- a Tetanus/Diphtheria combination within the past 10 years.

In the event of an outbreak of measles, mumps, or rubella, students who have not provided documentation of immunity will be excluded from attendance of campus activities, including classes, until the appropriate disease incubation period has expired.

Placement Requirements for English, Mathematics, and University Seminar

Placement in entry-level college courses is based on the Enhanced ACT/SAT test scores. If no scores are on file in the Office of Admissions or the Office of the Registrar, the score will be considered to be 0 in all areas at the time of admission and registration. Registration information for the ACT can be obtained through Student Services, Keeny Hall 310.

Subject	Criteria	Placement
English	English ACT less than or equal to 16, or Verbal SAT less than or equal to 420	Placement in English 099
	English ACT 17-18 inclusive, or Verbal SAT 430-450 inclusive, or successful completion of English 099	Placement in English 100*
	English ACT greater than or equal to 19, or Verbal SAT greater than or equal to 460.	Placement in English 101

*English 100 serves as a replacement for English 101 for students required to enroll in English 100.

Subject	Criteria	Placement
Math	Math ACT less than or equal to 15, or Math SAT less then or equal to 370	Placement in Math 099. Not eligible for Math Placement Exam
	Math ACT 16-17 inclusive, or Math SAT 380-420 inclusive	Placement in Math 099 or take & pass Placement Exam A** to place in Math 100*.
	Math ACT 18-21 inclusive, or Math SAT 430-510 inclusive	Placement in Math 100*. No placement exam is available for by passing Math 100.
	Math ACT 22-23 inclusive, or Math SAT 520-550 inclusive	Placement in Math 101. Not eligible for Math Placement Exam.
	Math ACT 24-25 inclusive, or Math SAT 560-580 inclusive	Placement in Math 101 or take and pass Placement Exam B to earn credit for Math 101. Advance preparation for the exam is necessary**.
	Math ACT greater than or equal to 26, or Math SAT greater than or equal to 590	Credit for Math 101 will be granted if Math ACT/SAT score was earned within the previous 5 years. Eligible to enroll in Math 101 or Math or Statistics course that has Math 101 as the only Math prerequisite. If such a student desires to begin with Math 220 or 222 as the first Math course, Placement Exam C is required to earn credit for Math 111 and Math 112. Advance preparation for the exam is necessary.

NOTE: Permission to take a placement/credit exam in a given course will be denied those students who have previously attempted the course and/or the placement/credit exam. Refer to the "Louisiana Tech Credit Exam" sections of this Bulletin for additional information.

*Math 100B-C serves as a replacement for Math 101 for students required to enroll in Math 100.

**Various review materials for the Math Placement Exams are available free of charge by accessing the web site rehanna.pageout.net . Select the desired course, then "Syllabus", then select "Instructions for Accessing Review Materials". Print the instruction sheet and follow the stated instructions.

Subject	Criteria	Placement
Univ. Seminar	Reading ACT less than or equal to 17, or Verbal + Math SAT less than or equal to 850	Placement in University Seminar 101 (3 credit hours)
	Reading ACT greater than or equal to 18, or Verbal + Math SAT greater than or equal to 860	Placement in University Seminar 100 (1 credit hour)

Transfer students must satisfy the same placement requirements as beginning freshmen with the following exceptions for University Seminar:

- Students transferring to Louisiana Tech **with less than 24 semester credit hours** should take University Seminar 101 if their Reading ACT is less than or equal to 17, or Verbal + Math SAT is less than or equal to 850.
- Students transferring to Louisiana Tech **with less than 24 semester credit hours** are not required to take University Seminar 100 or 101 if their Reading ACT is greater than or equal to 18, or Verbal + Math SAT is greater than or equal to 860.
- Students transferring to Louisiana Tech **with 24 or more semester credit hours** are not required to take University Seminar 100 or 101.

For more detailed information, see the English, Mathematics, or University Seminar sections of this Bulletin.

Orientation

Orientation programs are held under the direction of the Division of Admissions, Basic and Career Studies.

New freshmen who have been accepted for the Fall Quarter are encouraged to attend one of four sessions of Summer Orientation. Each student selects courses and completes registration for the Fall Quarter, except for payment of fees. Close academic direction and personal attention are accomplished through faculty advising. A special program for parents is available in order to make the transition from high school a smooth and orderly process for students and parents. Two special sessions for transfer students are also conducted.

A Mini-Orientation is held on the day preceding the beginning of each new quarter for all new students. Students are given information to assist them with registration and to enhance their college experience.

The Orientation Office extends its functions to include assistance and visitation to area high schools as well as serving prospective students who are visiting the Tech campus.

University Seminar

University Seminar is a one to three credit hour course for entering freshmen and select transfer students. The course is designed to orient new students to the University environment and provide information about available campus resources. The course is taught by instructors from all segments of the University and has proven beneficial to both students and the University. Instructors present information about campus resources, time management, and academic regulations as well as lectures on a variety of topics including health, stress, safety, campus involvement, and career development. Additionally, University Seminar 101, which is the 3 credit hour format, builds reading and study skills fundamentals that are essential for success in college.

New Freshmen

ACT/SAT Score	Course Placement
0-17 Reading ACT 0-850 Verbal + Math SAT	Must enroll in University Seminar 101 (3 credit hours)
18 or higher Reading ACT 860 or higher Verbal + Math SAT	Enroll in University Seminar 100 (1 credit hour)

Transfer Students

ACT/SAT Score	Course Placement
0-17 Reading ACT 0-850 Verbal + Math SAT AND transferring in less than 24 semester credit hours	Must enroll in University Seminar 101 (3 credit hours)
18 or higher Reading ACT 860 or higher Verbal + Math SAT, AND transferring in less than 24 semester credit hours	Option to enroll in University Seminar 100 (1 credit hour)
All students transferring in 24 or more semester credit hours	Option to enroll in University Seminar 100 (1 credit hour)

Enrollment, Schedule Changes, & Data Update Information

Semester Hour/Quarter Calendar

Louisiana Tech University operates on a quarter calendar, but the unit of academic credit awarded is the semester hour. This is accomplished by increasing the amount of contact time per class meeting. One and one-fourth hours (75 minutes) of recitation (class meeting) each week is usually awarded one semester hour of academic credit; two 75-minute class meetings each week would yield two semester hours; three 75-minute meetings yield three semester hours, and so on. Two or more periods of laboratory work per week are normally counted as one recitation, yielding one semester hour of academic credit. Credit for each course is described in the *Courses of Instruction* section in the back of this Bulletin using a three-part numerical description, e.g. 0-3-3. The first digit indicates the number of lab contact hours per week. The second digit is the number of lecture periods per week (75 minute class meetings). The final digit indicates the credit awarded for the class in semester hours.

Semester Hour Load

A **normal undergraduate student load** is that amount of course work required by the curriculum in which the student is registered. The maximum load allowed without special permission is 12 semester hours including the Summer Quarter. Six semester hours are maximum for a summer 6- week session. Any schedule exceeding 12 semester hours must be approved in writing by the student's Dean on the advising form or the drop/add form. Courses pursued in excess of the allowed limits without approval will be invalidated upon discovery. Correspondence or Internet courses and concurrent enrollments at other institutions are considered as part of this load and must also be approved by the Dean.

A degree candidate or a student with a "B" average (3.0), both overall and in the preceding quarter, may be permitted to carry a maximum of 14 semester hours during a quarter. This requires approval in writing from both the student's Dean and the Vice-President for Academic Affairs.

As for a minimum load, full-time undergraduate students must be registered for 8 or more hours. A degree candidate may carry only the courses required for graduation at the end of the quarter and still be considered a full-time student.

A graduate student is full-time with 6 graduate hours and half time with three graduate hours.

Credit examinations and classes taken for audit do not count in a student's load.

Course Numbers

Course numbers have been standardized. Developmental education courses are numbered 099 and are not applicable toward degree credit. Undergraduate courses are numbered 100 through 499 with the 300- and 400- series usually reserved for Juniors and Seniors. There are some 400- series courses that are approved for graduate credit and open to graduate students. These courses will have a special **(G)** designation at the end of their course description in the back of this Bulletin. Courses numbered 500 and 600 are open only to graduate students.

Registration and Advisement

Students may attend class only after completion of registration, which includes payment of tuition and fees. Registration days and procedures are announced in this Bulletin and also in the **Schedule of Classes** each quarter. Students who are currently enrolled are expected to register for the next quarter during the "Early Registration" period. Currently enrolled students who register after Early Registration are assessed a late registration fee.

New students and readmitted students register during the General Registration period (before the first class day).

Late Registration is allowed during the first three regular class days. A late registration fee is assessed during this period. Students who have registered may also add or drop classes during these three days.

Students who are selected for participation in forensics, band, choir, chorus, orchestra, and private music lessons after the final day to add a class may still be allowed to add the activity by obtaining their dean's permission. Such adds will be considered only during the first four weeks of the quarter.

Department heads or appointed faculty members advise during the scheduled registration advisement period; however, the student should be well acquainted with his/her particular curriculum, as well as any special registration requirements of his/her department or college.

Students are responsible for taking the courses required in their curriculum as they are offered and are responsible for completing any pre-requisites that are required.

Expenses

Louisiana Tech Expense Sheets are published each quarter and are available by request from the Admissions Office, P.O. Box 3178, Ruston, LA 71272 (BULLDOG@.latech.edu). Questions concerning tuition and fees should be directed to the University Comptroller. All tuition and fees must be paid by the published deadlines to avoid unenrollment. Student financial aid and scholarships are available for qualified students. Application for any of these resources should be completed well in advance of the time that tuition and fees will be due.

Class Attendance

Louisiana Tech University uses the Class Attendance Policy of the University of Louisiana System. Minimum Class Attendance Regulations for the Colleges and Universities under the control of the Board are as follows:

1. Class attendance is regarded as an obligation as well as a privilege, and all students are expected to attend regularly and punctually all classes in which they are enrolled. Failure to do so may jeopardize a student's scholastic standing and may lead to suspension from the college or university.
2. Each instructor shall keep a permanent attendance record for each class. These records are subject to inspection by appropriate college or university officials.
3. A student shall submit excuses for all class absences to the appropriate instructor within three class days after the student returns to the respective class. The instructor may excuse the student for being absent and will also accept an official university excuse. The Registrar's Office does not issue excuses for absences.
4. When a freshman or sophomore student receives excessive unexcused absences (ten percent of the total classes) in any class, the instructor may recommend to the student's academic dean that the student be dropped from the rolls of that class and given an appropriate grade.
5. Faculty members are required to state in writing and explain to the student their expectations in regard to class attendance prior to the close of the drop/add period.

Dropping a Course

To drop a course a student must have the consent of his/her department head or advisor on the proper drop/add form and the form must be processed through the Registrar's Office. The "W" grade is given when a student drops an individual class after the final date for Late Registration (3rd class day) has passed and before the end of the first eight weeks of a quarter. After that date students may not drop courses. The deadline for dropping a class with a "W" grade is listed in the University calendar published in the schedule of classes each quarter and online at www.LaTech.edu . A student may be administratively dropped from a class, or more than one class, or from the rolls of the University, if his/her dean considers such action to be in the best interest of the class or the University. In such a case, the dean will decide whether the student will be given a "W" or an "F."

Resigning From the University

To resign from the University, a student obtains a resignation card from the Registrar's Office, obtains the applicable signatures listed in the instructions, and turns in the card to the Registrar's Office. The I.D. card should be turned in to the Food Service Office on the 2nd Floor of the Student Center. A resignation is not official until the required card is on file in the Registrar's Office. When a student resigns before the close of registration, the permanent record will reflect only that he/she registered and resigned. When a student resigns during the first seven weeks of the quarter, the grade of "W" will be assigned. A grade of "F" for each class will be recorded for any student who leaves without proper resignation. A student living in the dormitories or housing who leaves without proper resignation will forfeit the unused portion of any payment or deposit made to the University.

Appeal Process for Course/Drop Resignation After End of 8th Week

Approval of an appeal for dropping a course or resigning may be granted by the student's academic dean only for a documented reason which prohibited the completion of the course(s). With the dean's approval a grade of "W" will be assigned. Examples of cases eligible for appeal are illness/injury to student, death in student's immediate family, natural disaster, military duty. Extraordinary cases do not include dissatisfaction with an anticipated grade or a decision to change a major.

Repeated Courses

All attempts at a repeated course will be computed into the cumulative grade point average. For a course which cannot be repeated for credit, only the last attempt is computed into the total hours **earned**. To repeat a course in which credit has already been earned, the student must have the consent of his/her department head. Students who earn an "F" in a course must repeat the course with a passing grade in order to earn credit. (See "Graduation Requirements" and "Minimum Scholastic Standards" for an explanation of the method by which quality points are used in determining averages for graduation and for probation and suspension.) The last attempt of a repeated course is considered as the final grade.

Auditing a Course

To audit a class the applicant must be eligible to enter the University either as a regular student, as a visiting student, or as a special student. Permission to audit a physical education activity class must be obtained from the HPE department head. A student auditing one or more classes must follow the regular registration procedure and enter "audit" on the advising form as type of credit desired. The student will be assessed the appropriate general registration and tuition fee, which is not refundable. The auditing student is not required to do the work of a regular student; however, a reasonable amount of class attendance is expected if the audited course is to appear on the student's permanent record. An audit may not be changed to credit, or vice versa, after registration closes.

Changing from One Major to Another

To change an academic major, the student should follow this procedure:

ON THE INTERNET: Go to the TECH website (www.latech.edu), click on the red **BOSS** button and then click on the red **"Academic Major Changes"** button. Print out the form and follow the instructions provided. Once the student has obtained the signatures, return the form to the Registrar's Office (KH 207). Student Information System changes will be completed by the Registrar's staff.

IN PERSON: Come to the Registrar's Office (KH 207), and pick up an Academic Major Change form. The student will obtain the signatures required and then return the form to the Registrar's Office. Student Information System changes will be completed by the Registrar's staff.

Change of Address/Phone Number

Students are responsible for keeping the University informed of address and telephone number changes as soon as they occur. Local address and phone number changes can be made online via the BOSS website. Permanent address and phone number changes must be made in writing at the Registrar's Office (Keeny Hall 207).

The University will consider all correspondence mailed to a student at the address currently on file to have been received, unless it is returned to the sender.

Veteran Certification

Louisiana Tech University provides a service for students eligible to receive veteran's educational benefits. For more information, students may contact the Veteran's Certifying Official in the Office of the University Registrar, Keeny Hall Room 207, or by e-mail - registrar@latech.edu .

Emergency Announcements Through the Media

It can be assumed that Louisiana Tech is in session in accordance with the published calendar, schedules, and bulletins unless otherwise announced through the news media as authorized by the President or his designee. Such announcements will state one of the following:

"Louisiana Tech University is closed", which means that no classes are being held and only certain designated Building and Grounds maintenance staff are on-duty.

"Classes are dismissed. All offices are open". All employees other than nine-month faculty are on duty.

Credit by Examination & Other Non-University Sources

The University subscribes to the concept that individuals possessing knowledge equivalent to that attained in a specific course should be advanced in level in order that a continuous challenge is met. There is no requirement as to where and how the knowledge was acquired. Certain policies and procedures have been adopted by the University in fulfillment of this philosophy. Unsuccessful attempts will not be recorded against

the student. Application of credits toward a degree are determined by the student's curriculum. Credit by all types of examinations collectively may not exceed sixty (60) semester hours.

The University provides for credit through Military Experience, for Advanced Placement, and for Credit by Examination as follows:

Credit Through The College Board Advanced Placement (AP) Program

The University recognizes college-level courses taken in secondary schools under the College Board Advanced Placement Program. Students who have completed these tests should have their scores sent to the Admissions Office. Students may earn up to 30 semester credit hours through the AP Program.

The College Level Examination Program (CLEP) Subject Examinations

A student may gain college credit in a number of subjects by scoring the recommended score for credit at Louisiana Tech. The CLEP is administered nationally by Educational Testing Service (ETS). The examination may be taken Wednesday of the third week of each month at Louisiana Tech University upon application to the Coordinator of the Testing Center or at any national CLEP Center. Registration should be filed 15 working days prior to test date. Scores are provided by ETS through their transcript service. Subjects are being added annually. Lists of subject examinations available may be obtained from the Testing Center, Keeny Hall 310. The student's academic dean must approve the acceptability of the credit toward a degree program. A student will not be allowed to receive credit based upon the CLEP subject exam if he/she has attempted and passed or failed the course. Credit by means of this type is limited to 30 semester hours. Applications for CLEP subject examinations may be obtained from any test center participating in the program.

Louisiana Tech Credit Examinations

Credit examinations are administered in some subject areas for the benefit of the student who believes he/she has already attained the level of knowledge required in the course(s). The procedure for registering for credit by examination is as follows:

1. Students may register for credit by examination in any approved course, but only during regular registration periods. No examination can be given to a student who has not properly registered for the examination. Permission to take a credit examination in a given course will be denied those students who have previously attempted the course for credit, those who have earned credit in a higher sequence course, or those who did not receive approval from the department head responsible for the course.
2. Each credit by exam will have a section number of "E01" and will be entered on the student's registration form or added during the "add period." Regular University fees will apply for billing purposes.
3. The student's registration record will reflect the credit by exam course(s) for which the student registered; these courses will not, however, be added into the total semester hour load of the student for determining "full-time" status, but will be counted for the purpose of determining fees.
4. Examinations will be given according to the times listed in the schedule of classes or times assigned by the department head. Examinations are normally scheduled during the first three class days of a quarter.
5. Successful completion of an examination will be recorded on the permanent academic record as "credit by examination" with a grade of "S." Grades of "S" are not used to compute the grade point average. Should a student fail to take or pass the credit examination, there will be no entry made on the student's academic record.
6. Credits through this type of examination are limited to thirty (30) semester hours on a student's degree plan.

Mathematics Credit by Placement Exam

Credit for Math 101 will be granted for each student with Math ACT score greater than or equal to 26 or Math SAT score greater than or equal to 590 if the Math ACT/SAT score was earned within the previous 5 years.

Credit for Math 101, Math 111, or Math 112 will be granted to each student who is eligible for and successfully completes the Placement Exam for the course. See the Placement in Mathematics and Statistics section of this Bulletin for eligibility requirements for each exam.

Credit Based on Military Experience

Honorably discharged members of the United States Armed Forces may be allowed credit for physical education upon presentation of a copy of their discharge, DD 214, to the Registrar's Office.

Additional credit may be granted for course work completed in service schools where equivalence in terms of college courses has been recommended for college credit in the "Guide to the Evaluation of Education Experience in the Armed Services," published by the American Council on Education. Official documents must be submitted to the Office of the Registrar for an evaluation of these experiences.

Credit Through DANTES

Louisiana Tech University is a participating institution with the Defense Activity For Non-Traditional Education Support (DANTES) program. Credits earned are recognized by the University in accordance with the recommendations of the curriculum in which the student enrolls and must not duplicate other college credits earned.

Academic Regulations

Student Classification & Admission Credential Requirements

A Regular Student is one who has satisfied all entrance requirements, is qualified to pursue a curriculum leading to a degree, and is pursuing one of the prescribed curricula of the University.

A Full-Time Undergraduate Student is one enrolled in at least 8 semester hours for the quarter, excluding "credit examinations" and courses taken as "audit." An undergraduate student enrolled in four semester hours during a six-week period in the Summer is also considered full-time.

A Part-Time Undergraduate Student is one enrolled in fewer than 8 semester hours for the quarter.

A Visiting Student is one who has not been regularly admitted to the University and is not approved to pursue a curriculum. This admission is for one quarter. A student is not eligible to register for an additional quarter under the visiting student classification without reapplying.

A Transfer Student is one who has previously enrolled at another college or university prior to enrolling at Tech.

A Post-Baccalaureate Student holds at least one bachelor's degree from an accredited college, but has not been admitted to the Graduate School and is not pursuing a prescribed curriculum. A post-baccalaureate student may not take classes for graduate credit, and any course taken to make up undergraduate deficiencies cannot be later transferred for graduate credit. A student who holds a bachelor's degree and is pursuing a curriculum leading to another bachelor's degree is an undergraduate regular student.

A Graduate Student holds at least a bachelor's degree from a regionally accredited institution and has gained admission to the Graduate School.

Classification by Hours Earned

Freshman:	1-29 hours earned
Sophomore:	30--59 hours earned
Junior:	60--89 hours earned
Senior:	90 semester hours earned-Graduation

General Education Requirements (GER)

Louisiana Tech University has chosen to strengthen undergraduate education by requiring each curriculum to include a core of general education requirements.

ASSOCIATE DEGREE (GER) are as follows:

ENGLISH (GER) ..... 6 Hours
Freshman Composition (English 100 or 101, and 102)
MATHEMATICS (GER) ..... 6 Hours
TOTAL ..... 12 Hours

BACCALAUREATE DEGREE (GER) are as follows:

ENGLISH (GER) ..... 6 Hours
Freshman Composition (English 100 or 101, and 102)
MATHEMATICS (GER) ..... 6 Hours
Math 100 or above and one additional three (3) hour course in Mathematics or Statistics.
COMPUTER LITERACY (GER)
Curriculum chosen by the student must provide basic instruction in and/or use of computer technology.
NATURAL SCIENCES (GER) ..... 9 Hours*
Physical Sciences (Chemistry, Physics, Geology)
Biological Science
*Must include both physical and biological science with at least six (6) hours from a two-quarter sequence.
ARTS (GER) ..... 3 Hours
Must be taken from courses such as:
Art 290: Art Appreciation
Health & Physical Education 280: Dance Appreciation
Music 290: Music Appreciation
Speech 290: Theatre Appreciation
HUMANITIES (GER) ..... 12 Hours
History**, Literature**, Speech**, Languages (above the introductory level), Philosophy, English*
*Must include at least three (3) hours at the 200-level or above.
**Minimum of three (3) hours required.
SOCIAL SCIENCES (GER) ..... 9 Hours*
Economics, Geography, Anthropology, Political Science, Psychology, Sociology (*Minimum of 2 disciplines)
TOTAL ..... 45 Hours

Degree Programs

Louisiana Tech has been authorized to grant two associate degrees, seven baccalaureate degrees and ten graduate degrees.

The associate degrees are: Associate of General Studies and Associate of Science.

The baccalaureate degrees are: Bachelor of Architecture, Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Interior Design, Bachelor of Music, Bachelor of Science, and Bachelor of General Studies.

The graduate degrees are: Master of Arts, Master of Science, Master of Business Administration, Master of Professional Accountancy, Master of Fine Arts, Master of Education, Doctor of Business Administration, Doctor of Philosophy, Doctor of Education, and a joint PhD/MD with LSUMC-S.

Minors

A minor will consist of a minimum of 21 hours of course work; a minimum of 40 to 60 % of the courses will be at the 300- to 400- level. Minors may be offered in various departments at Louisiana Tech University. Please refer to college and departmental sections for information concerning available minors. Minors should be determined no later than the junior year (completed 60 hours) at which time the student's minor plan will be documented and placed in the student's departmental major folder. Progress toward completion of minor requirements is to be monitored by the student's major advisor. Approval and certification of minors are the responsibility of the student's major college. Minors are indicated on the student's transcript. Students may complete more than one minor. **All courses applied toward the minor must be completed with the grade of "C" or higher.**

Curriculum Matriculation

1. Students in Basic and Career Studies (undecided) and those students entering specific colleges from Basic and Career Studies will be allowed to follow the curricula that were in effect at the time of their admission to the University, as long as the students are pursuing their degrees on a continuing basis.
2. Students transferring from one college to another on campus or those transferring from other institutions are not allowed to follow a curriculum that was in effect before they transferred.
3. Students who change their major must follow the curriculum in effect at the time of the change.
4. Students may follow an updated curriculum that becomes effective while in a program of study; however, mixing of curricula is not permitted in satisfying requirements for graduation.
5. Students who interrupt their studies and do not attend for more than three quarters (including the Summer Quarter) are required to follow the curriculum in effect when they return to the institution.

Louisiana Statewide Articulation

Louisiana Tech subscribes to the statewide Articulation Policy as adopted by the Board of Regents. The aim of this policy is to ensure that transitions which students may encounter in their educational career will be orderly.

System of Grading

Official grades are maintained in the University Registrar's Office. Tech applies a traditional system of grading and awarding quality points for grades earned. An "A" is awarded for the highest degree of excellence that is reasonable to expect of students of exceptional ability and application. A grade of "B" is superior. A grade of "C" is average. A grade of "D" is

given for a quality of work that is considered the minimum for receiving credit for the course. A grade of "F" is given for a failure, and the work must be repeated to receive academic credit. The University's system of grading is as follows:

Grade	Quality Points
A	4 quality points per semester hour
B	3 quality points per semester hour
C	2 quality points per semester hour
D	1 quality point per semester hour
F	0 quality points per semester hour
I	Incomplete (see explanation below)
S	Satisfactory (see explanation below)
W	Withdrew (see explanation below)
NC	No Credit (see explanation below)

The grade "I" (Incomplete) is used to denote failure to complete all assigned class work and/or examinations as a result of ***conditions beyond the student's control.*** **It is the responsibility of the student to initiate a request with the instructor that a grade of "I" be issued.** If the student's work is of passing quality, the instructor may approve the student's request and will assign a grade of "I" plus the average letter grade on all work completed to that point (e.g. IA, IB, IC, or ID). A grade of "IF" cannot be issued. If the instructor agrees to issue an "I," he/she will complete a standard "contract" with the student detailing requirements for course completion and specifying the date those requirements must be finished. Instructors then provide a copy of the contract to the student and a copy to the department head/director. Students will receive a grade of IA, IB, IC, or ID for that quarter. Incompletes are factored into hours attempted and quality points awarded. Therefore, they impact a student's quarter and cumulative grade point averages and are a factor in academic probation or suspension decisions. The maximum amount of time allowed for a student to finish incomplete work is Friday of the fourth week in the following quarter, with one exception: students receiving an "I" in the Spring Quarter have until Friday of the fourth week in the following Fall Quarter to complete their work. A reminder of this date is published in the academic calendar each quarter and can also be found on the academic calendar at Tech's website (www.LaTech.edu). If the student does not complete the required work within the contracted period, the instructor will change the "I" to an "**F**" by delivering a final grade change to the Registrar's Office by Friday of the fifth week of the quarter. The final grade replaces the "I" on the student's permanent record (transcript); attempted hours, earned hours, quality points, and quarter/cumulative grade point averages are recalculated applying the final grade. A student may be placed on or removed from academic probation or suspension based on the recalculated GPA at the time an "I" grade is cleared. "I" grades are cleared only by completing the required course work, and not by registering for the course again. **NOTE:** Students registered for approved graduate research, practicum, dissertation, or thesis courses requiring multiple quarters of the same course registration to complete the research receive an "I" for each attempt until the research or practicum is accepted as complete by the advising faculty member. At that time, the graduate student's "I" grades are changed to "S" on his/her permanent record.

A grade of "S" indicates satisfactory completion of a course. The "S" grade increases hours earned but does not affect hours attempted or quality points and is not computed in any grade point average (GPA). Students registered for a course where the grade of "S" is used who do not complete the required course work will receive the grade "F."

A "W" is issued when a student withdraws from a class (drops a class) after the final date for registration has passed and before the end of the first seven weeks of a quarter. The "W" grade will appear on the student's permanent record (transcript), but is not included in computing the student's GPA. Students who stop attending class(es) without following proper drop/withdraw or resignation procedures (walk-away) will receive an "F" grade for each class affected.

The grade "NC" (used for undergraduate developmental courses only) denotes no credit earned or hours charged and is not computed in any GPA.

Grade Point Average

A student's ***quarterly GPA*** is obtained by dividing the sum of the quality points earned for the quarter by the number of semester hours attempted that quarter. The ***cumulative GPA*** is determined by dividing the total quality points earned by the total number of hours attempted. Cumulative GPA is the benchmark figure used to determine undergraduate academic honors, undergraduate degree class standing at graduation, academic probation, and academic suspension. Quarterly and cumulative GPA's are recorded on the student's permanent academic record (transcript) and reported each quarter with their grades.

An **earned GPA** is computed by subtracting any non-repeated "F" grade hours, repeated course hours, and quality points from the respective cumulative totals, and then recalculating the average. The Louisiana Board of Regents permits state universities to use the earned GPA (when necessary) to determine eligibility for entry into specific upper division undergraduate courses, eligibility for progress into and completion of a certification program, eligibility for a practicum, and most importantly eligibility for receipt of an undergraduate degree. The earned GPA is calculated and maintained by the academic department involved and maintained with the department's/advisor's copy of the student's curriculum sheet. Earned GPA's are not maintained in the Student Information System as part of a student's electronic file and are not reported with grades or on the academic transcript.

Good Standing

It is expected that all undergraduate students should maintain a cumulative GPA of at least 2.0 (C) on all college work attempted and on all work attempted at Tech. The University will, however, certify a student to be in "good standing" as long as that student is eligible to be enrolled.

Academic Misconduct

Academic misconduct at the University is determined by the faculty member, committee, or other supervisor(s) under whom such misconduct occurs. The misconduct may occur in an individual class, a comprehensive examination, a practicum, an internship, a thesis or dissertation, a research project, a multi-quarter sequence of courses, or any other academically-related matter or setting. Penalties may range from dismissal from the University or an academic degree program to a failing grade or lesser penalty as determined by the faculty member, plan of study committee, or supervising authority. The student has the right to appeal the charge of academic misconduct in accordance with the Final Grade and Appeals Procedure.

Final Grade & Academic Appeals Procedure

A final grade in a course represents the cumulative evaluation and judgment of the faculty member placed in charge of that course. If a student feels the final grade or an academic

decision in a course was not determined in accordance with University policies or was determined arbitrarily, the student may appeal by adhering to the following procedure:

1. **Confer with the faculty member,** setting forth clearly all points of concern. If unsatisfied with the results of the conference, then,
2. **Confer with the head of the department** in which the course is taught, setting forth clearly all points of concern. If the student remains unsatisfied, then
3. **Write a letter of appeal to the dean of the college** in which the course is taught. The dean will send copies of the letter to the faculty member and department head. This letter must (a) be received by the dean within the first ten (10) regularly scheduled class meeting days of the term immediately following the term in which the appealed grade was received and (b) be an accurate and complete statement of all facts pertaining to the matter. Falsification may result in disciplinary action.

The dean may make a decision, which would be final in the matter, or refer the appeal to the college's committee on standards for review and recommendation. The committee's report would be a recommendation to the dean, whose decision would be final. In reviewing the appeals, both the dean and committee would have broad latitude in their procedures and recommendations. They might, for example, request additional information privately from those involved. Or they might choose to invite specified persons, including the student and faculty member, to a meeting to discuss the matter. Whatever their approach, it should take appropriate account of the interests of both the student and faculty member.

In the case where a grade penalty is given to a student because of academic misconduct, the student has the right to appeal the grade penalty as well as the charge of academic misconduct in accordance with the grade and academic appeals procedure.

In all cases the dean shall communicate the final decision to the student, faculty member, department head, and, if a grade change is involved, to the Registrar. In appeals where the dean initially makes the decision, the decision should normally be communicated to the student within ten (10) class days after the appeal deadline. When appeals are referred to the committee, the final decision should normally be communicated to the student by the dean within twenty (20) class days after the appeal deadline.

Transcripts

The official permanent academic records for all Tech students are in the custody of the University Registrar's Office. These records are protected in accordance with the guidelines contained in the "Family Educational Rights and Privacy Act." Transcripts of the academic record may be secured by the individual personally or will be released on the student's written authorization. Official transcripts will not be issued for any student who has an unfulfilled obligation to the University. This is termed a "charge" or a "hold" and must be cleared with the department holding the charge. Transcripts are a service provided by the University Registrar's Office free of charge.

Grade Reporting

Students can obtain their grades via Interactive Voice Response (telephone) or the Internet during the one-month grade reporting period following the completion of each quarter. Specific instructions for access are published quarterly in the Schedule of Classes ("The Racing Form"), on the Tech website, www.LaTech.edu, and reminders provided by the University Registrar's Office during Early Registration. Students needing a copy of their grades after the reporting period may obtain them by requesting an unofficial transcript, or and/or specific letters of verification.

Minimum University Scholastic Standards

Academic Status

There are three categories of academic status for undergraduate students: academic good standing and eligible to be enrolled, academic probation and eligible to be enrolled, and academic suspension, therefore not eligible to be enrolled. Although students will usually receive official notification of academic status, such notice is not a prerequisite to students being placed in one of the above categories. Students have the responsibility to ascertain their academic status prior to the beginning of the next enrollment period.

Academic Probation

Undergraduate students will be placed on academic probation whenever their cumulative averages are ten or more quality points below a 2.0 average. To determine this, multiply the cumulative hours attempted by two. If the answer is ten or more quality points greater than the actual cumulative quality points earned, students are placed on probation. (e.g., Student attempts 40 semester hours and earns 71 quality points. Multiply 40 X 2=80; subtract 71 from 80 =9; student is not on probation because nine is less than ten.)

Once on academic probation, a student will remain on probation (as long as each quarter average is at least 2.0) until the cumulative GPA of 2.0 or higher is achieved.

Once a cumulative GPA of 2.0 or higher is achieved, a student will be cleared of academic probation and placed in academic good standing.

Academic Suspension

Undergraduate students on academic probation will be suspended at the conclusion of any quarter, including summer, in which they fail to earn a GPA of at least 2.0. First-time freshmen will not be suspended prior to the completion of three quarters of enrollment.

The period for the first suspension will be for one quarter. All subsequent suspensions will be for one calendar year.

A student on academic suspension from Louisiana Tech University may not obtain credit toward a degree at Tech for courses attempted at another institution during the suspension period. No credit earned while under suspension from another university will be accepted toward a degree at Louisiana Tech University.

Readmission from Suspension

Appeal for reinstatement after academic suspension may be made to the student's academic dean or Director of Basic and Career Studies, as appropriate. Reinstated students will be continued on academic probation.

Academic Renewal

Undergraduate students who have dropped out or have been suspended because of poor academic performance may request to start over with the status of an entering freshman at Louisiana Tech University under the provisions of academic renewal. The following conditions apply.

1. :At least three consecutive calendar years must elapse between the end of the quarter in which the student was last

registered for credit at any college or university and being enrolled under academic renewal.

2. The student must submit a written application for academic renewal to the Academic Renewal Subcommittee of the Enrollment Management Council, Louisiana Tech University, P.O. Box 3178, Ruston, LA 71272. This application must be received by the subcommittee by the end of the official last class day of the first quarter of attendance at Louisiana Tech. It should also indicate any circumstances which have changed since the last enrollment that would support a reasonable expectation of the candidate's academic success.
3. The Academic Renewal Subcommittee will review the application and determine the candidate's eligibility for renewal prior to the end of the student's first quarter of enrollment at Louisiana Tech University.
4. No prior academic credit carries forward as part of a degree program; however, the prior record remains a visible part of the student's transcript.
5. If granted, the date of academic renewal is entered upon the transcript along with a statement prohibiting use of previously earned credits and quality points to meet degree requirements, to compute the grade point average leading toward undergraduate certificates or degrees, or to determine graduation status.
6. Upon being granted academic renewal, the student has status as an entering freshman with no credits attempted and no quality points earned.
7. A student demonstrating competency in a given area may be allowed advanced standing (without credit) or a waiver of requirements just as any entering freshman. Credit examinations may be taken for courses in which grades of "C" or higher were earned.
8. Academic renewal may be granted to a person only once, regardless of the institutions attended.
9. Students are cautioned that many undergraduate professional curricula, graduate, and professional schools compute the undergraduate grade point average over all hours attempted when considering applications for admission.
10. Transfer students who have previously been granted academic renewal will use the application procedure described above for consideration of transfer of renewal.
11. Academic renewal does not pertain to accumulated Financial Aid history. Accumulated quarters and award limits include all quarters on enrollment.

Outstanding Academic Achievement

The **President's Honor List** is prepared at the end of each quarter and is for undergraduate students with an outstanding grade point average for that given quarter. The requirements are (a) a grade point average of at least 3.8, (b) a minimum of nine semester hours pursued, (c) no grade lower than a "B" (d) all courses attempted are at the 100-level or above.

The **Dean's Honor Lists** are also prepared at the end of each quarter for undergraduate students with high grade point averages for that quarter. The requirements are (a) a grade point average of at least 3.5, (b) a minimum of nine semester hours pursued, (c) no grade lower than a "C" (d) all courses attempted are at the 100-level or above.

Students enrolled in Developmental Education Program courses (099-series) are not eligible for these quarterly academic honors during the quarter(s) they are registered for the 099 course(s).

Graduation Requirements

Graduation requirements for the Associate and Baccalaureate degrees are as follows:

Associate Degree Requirements

The Associate of General Studies or Associate of Science degrees can be earned from Louisiana Tech University when a student has fulfilled the following requirements:

1. The candidate must complete one of the approved two-year programs consisting of 60 or more specified academic credit hours.
2. He/she must make a "C" average on hours earned. A student who is deficient on an hours-earned basis of more than 6 quality points of a "C" average at the beginning of the final quarter will not be allowed to register for graduation. A transfer student must also make a "C" average on all hours earned at Louisiana Tech.
3. If he/she is a transfer student, he/she must not have fewer than 24 weeks in residence at Louisiana Tech, during which at least 25 % of the semester hours required for the curricula are earned with a minimum 2.0 grade point average.
4. The last two quarters must be spent in residence. Exception: a student who has fulfilled the minimum residence requirements may be permitted to earn six of the last 18 hours out of residence.
5. The student must report his/her candidacy to his/her dean and the Registrar and register for graduation within the first three weeks of the quarter in which he/she expects to graduate.
6. One-fourth of the hours required for graduation must be completed in residence. Louisiana Tech does not permit a student to apply for more than six hours of correspondence study toward the pursuit of a degree.

The student must be registered at Louisiana Tech University during the quarter he/she is a degree candidate.

If a student wishes to add an associate degree as a second degree in another field of study at the University, at least 15 semester hours in addition to the number needed for the first degree are required. If a student completes requirements for an associate degree as he/she progresses toward a bachelor's degree, then no additional hours are required, providing that specific requirements are satisfied for both degrees.

If a student wishes to earn a baccalaureate degree from Louisiana Tech, he/she must re-apply for a baccalaureate program and meet all additional requirements as explained in each specific curriculum.

Baccalaureate Degree Requirements

1. The candidate must complete one of the curricula of the five colleges.
2. A "C" average on hours earned is required. A student who is deficient on an hours-earned basis of more than nine quality points of a "C" average at the beginning of the final quarter will not be allowed to register for graduation. A transfer student must also make a "C" average on all hours earned at Louisiana Tech.
3. If he/she is a transfer student, no fewer than 36 weeks residence at Louisiana Tech are required, during which at least 25% of the semester hours required for the curricula are earned with a minimum 2.0 grade point average.
4. He/she must spend the senior year in residence. Exception: A student who has fulfilled the minimum residence requirements may be permitted to earn 9 of the last 36 semester hours out of residence.
5. The student must report his/her candidacy to his/her dean

and to the Registrar and register for graduation within the first three weeks of the quarter in which he/she expects to graduate.

6. Three-fourths of the hours required for graduation must have been completed in college residence. Louisiana Tech does not permit a student to apply more than six hours of correspondence study toward the pursuit of a degree.

Additional Information for All Degree Candidates

The student must be registered at Louisiana Tech University during the quarter he/she is a degree candidate.

Each degree candidate is expected to be present at the commencement ceremony. A candidate can petition to be absent through a written request to the University President. Information concerning duplicate diplomas, diploma mailing fees, and other diploma services can be obtained from the Registrar's Office.

It is highly recommended that the candidate register in the Placement Office during the quarter preceding the one in which he/she expects to graduate.

If the student wishes to earn a **second baccalaureate** degree in another field of study at the University, at least 30 semester hours in addition to the number required for the first degree must be earned. These 30 additional hours need not have been completed after the first degree was awarded, but the total hours earned must be the number required for the first bachelor's, plus 30 more. In addition, the student must satisfy all requirements for the second degree.

A student may acquire a **double major** under a single baccalaureate degree by completing the total hours required for one degree and the total hours required in the subject courses for the second major.

A candidate for graduation who fails to pass the final examination in only one course during the last quarter's work may be permitted to take a "deficiency examination" in this course. If the student fails the "deficiency examination," the course must be repeated.

Graduate Degree Requirements:

For specific degree requirements, see the Graduate School section of this bulletin.

Graduation with Latin Honors

A student achieving outstanding academic results during their undergraduate career will receive special recognition at graduation through a suitable Latin inscription on their diploma, special wording on their official transcript, and by verbal recognition by their dean during the commencement ceremony. The following standards determine such recognition:

(a) **cum laude** a cumulative GPA of 3.30 on all hours pursued; **magna cum laude** a cumulative GPA of 3.55 on all hours pursued; **summa cum laude** a cumulative GPA of 3.80 on all hours pursued; and (b) the student must have earned a minimum of 30 semester credit hours at Louisiana Tech University.

NOTE: On August 29, 1999, The University of Louisiana System standardized the cumulative GPA requirements for eligibility for Latin honors at graduation. Effective with the Summer Quarter 2003 commencement, the following true cumulative GPA standards will be used by all System schools to award Latin honors at graduation: 3.50 for *cum laude*, 3.70 for *magna cum laude*, and 3.90 for *summa cum laude*.

Students who complete 21 semester hours of **Honors Program** classes in the **Foundations 21** curriculum, including the four interdisciplinary Foundations seminars, will receive formal designation as **Honors Scholars** on their official academic transcript. Honors students who take 9 semester hours of 400-level Honors classes and write an Honors Thesis will receive formal designation as **Senior Honors Scholars** on their official academic transcript.

Students receiving their first associate degree are also recognized for outstanding academic achievement. The following conditions determine such recognition: (a) an average on all hours pursued of 3.30 for ***Honors***, and 3.70 and above for ***Distinction***; (b) the student must have earned a minimum of 15 semester hours at Louisiana Tech University.

Certificate of Excellence

The Board of Regents awards the Certificate of Excellence to a student who, upon completion of the requirements for the baccalaureate degree, has successfully completed the following course work in general education with a cumulative GPA of 3.0 or better on a scale of 4.0.

ENGLISH..... 9 hours

6 hours Composition, 3 hours Literature.

MATHEMATICS.....6 hours

No course below college-level algebra may be counted.

COMPUTER LITERACY

Requirements to be determined by each college.

NATURAL SCIENCES.....11 hours

The natural science requirement must include credit in both physical and biological sciences and must be met by taking required courses for majors. The requirement must include a two-quarter sequence, two hours of laboratory experience, and an additional course worth at least 3 semester credit hours.

ARTS.....3 hours

HUMANITIES.....15 hours

To include at least 3 semester credit hours at the sophomore level or above; to include at least 6 semester credit hours of a foreign language above the introductory level. Courses must be in addition to those used to satisfy the requirements in other areas such as English, art, foreign languages, and literature.

SOCIAL SCIENCES.....6 hours

TOTAL SEMESTER HOURS.....50

Division of Student Affairs

The Division of Student Affairs is organized for the purpose of assisting students in determining self-direction and personal goals and to encourage development of skills for the satisfactory attainment of those goals. For this purpose the services of the division are many and varied with emphasis on the individual student.

Thus, any prospective Tech student should become familiar with the services of the Division of Student Affairs: housing for all students, counseling center, career development, intramural program, vehicle registration, student conduct, food services, bookstore, student activities, and student organizations.

"Visiting" students (see Inter-institutional Cooperative Programs) will receive services from the Division of Student Affairs in the home institution, the institution where admissions requirements have been met and degree programs are being pursued.

NOTICE: The regulations contained in this bulletin are based upon present and foreseen conditions, and the university reserves the right to modify any statement in accordance with unforeseen conditions.

Off-Campus Housing Application Requirements

The University of Louisiana System, State of Louisiana, has adopted resolutions affecting the housing policy at Louisiana Tech University and all of the other colleges and universities under its jurisdiction. In compliance with the University of Louisiana System resolutions, Louisiana Tech has adopted the following on-campus residency requirement: **All unmarried full-time undergraduate students, regardless of age or whether or not emancipated, except those living with parents, are required to live in on-campus residence halls as long as space is available, and purchase a meal plan.**

The resolutions further define the on-campus residency requirement to include a framework within which the colleges and universities may grant exemptions to the general regulation according to the unique academic character, academic traditions, objectives, and special qualities of each institution, keeping in mind the total objectives of higher education in the State of Louisiana. The philosophy of higher education in the State of Louisiana includes, in addition to the basic and primary educational pursuits, additional enrichment afforded by student life facilities and programs, all of which form an integral part of the total educational experience of the student.

In order to be consistent in granting exemptions from the on-campus residency requirement, **All unmarried full-time undergraduate students, regardless of age or whether or not emancipated, except those living with parents will be required to make application if they wish to be considered for an exemption.** Applications for exemption to the on-campus residence requirement must be made in writing to the Office of Student Life no later than fourteen (14) days prior to the beginning of the quarter. The student will be notified by the Office of Student Life of the decision rendered by the Committee. (Forms are available in the Student Life Office.) Any student who has applied for and been denied an exemption to the on-campus residence requirement shall have the right to appeal such decision to proper officials in accordance with the provisions and administrative procedures for appeal authorized and established pursuant to the authority of Act 59 of 1969 (L.R.S. 17:3101) and the rules of procedure of the State Board supplemental thereto. Such appeals will be made to the Office of Student Life and shall apply only to students who have submitted applications before the listed deadline.

Single, full-time undergraduate students who are living with their parents should contact the Student Affairs office for information about the commuting process. Completed, notarized forms must be submitted to the Student Affairs Office prior to 14 days before the beginning of the quarter

If the residence halls are full, exemptions to the requirement of on-campus residence hall living may be made according to the following priority:

1. First, undergraduate students who wish to live with a close relative, defined as grandparents, married brother, or married sister.
2. Second, undergraduate students who wish to live in social fraternity houses.
3. Third, Seniors.
4. Fourth, Juniors
5. Fifth, Sophomores
6. Sixth, Freshmen.

Within each of the foregoing classifications, the following additional rules of priority shall be applied:

1. First, students who have resided in off-campus housing the longest period of time.
2. Second, date application was received.

In addition, an exemption may be applied for in a hardship case or by an older student.

DEFINITIONS: The following words and phrases, in the absence of clearer indications, will be given the following interpretations:

- **"Living with parent"** means any place of abode owned, rented, or leased and OCCUPIED by the parent.
- **"Living with close relatives"** means any place of abode owned, rented or leased and OCCUPIED by the grandparent, married brother, or married sister.
- **"Living in social fraternity houses"** means living in any house owned, rented, or leased by a University-recognized social fraternity.
- **"Senior"** means an undergraduate student who has earned a minimum of 90 semester hours and 180 quality points.
- **"Junior"** means an undergraduate student who has earned a minimum of 60 semester hours and 120 quality points.
- **"Sophomore"** means an undergraduate student who has earned a minimum of 30 semester hours and 60 quality points.
- **"Freshman"** means an undergraduate student who has not yet earned 30 semester hours and 60 quality points of college credit. "Students who have resided in off-campus housing for the longest period of time" means the student who has lived off campus for the most quarters, other than with parent.
- **"Date application was received"** means recording the date the applications for exemption are received in the Office of Student Affairs. (Letters received on the same date will place individuals on the list in an alphabetical order.)
- **"Hardship case"** means a person who will suffer significant hardship because of valid financial, medical, or other good and sound reasons. (Special diets are available in on-campus dining facilities.)

- **"Older student"** means a person where a determination of fact that such individual is, by virtue of age and experience, incompatible with the residence hall age group.

Students found violating the policy as stated in the above paragraphs will be required to move into the residence hall system and pay full room rent and associated fees for the quarter in which the violation occurred. Should the student refuse to move into the residence hall and pay the rent, the student will be referred to the Behavioral Standards Committee.

Residence Hall Reservations

Room reservation contracts may be secured at the office of the Director of Housing. Applications for residence hall reservations will be accepted beginning October 1 of each year for the following Summer, Fall, Winter, and Spring quarters. Reservation contracts will not be confirmed until the following have been submitted to the Housing Office of the University: (1) completed residence hall reservation contract and (2) a $25 non-refundable application fee and $100 prepayment (check or money order only). The $25 non-refundable application fee increases to $50 after the deadline date. All residence hall students are required to pay for room and meals. Fall assignments are mailed the middle of July, and Winter, Spring, and Summer assignments are mailed one week before the quarter begins.

Residence Hall Accommodations

Specific room assignments for new Tech students are made according to the date the completed residence hall room contracts for the student and his/her roommate requests, if any, are received. Roommate requests must be mutual. Returning students presently living in the residence halls are re-assigned to their same rooms Fall Quarter through Spring Quarter unless a room change is requested. A limited number of halls are open each Summer Quarter. All buildings close at the end of each quarter.

Signing the Room Reservation Card

At an announced time during each Spring Quarter, all current residents sign a room reservation card in the Housing Office and make a $100 prepayment to choose a room for the Summer and/or Fall Quarters or to cancel their Fall and/or Summer reservation. Private room contracts must be renewed at this time also. Those wishing to remain in their same rooms are given first preference. The remaining spaces are given out on a first-come basis. Failure to sign a reservation card within the announced time frame may result in the loss of the resident's current room.

Terms Under Which Residence Hall Rooms are Contracted

The University reserves all rights in connection with room assignments or termination of their occupancy. Occupants of residence hall rooms are held liable for damage to the University property within the room, the building, and all other University property they use or to which they have access. Louisiana Tech is not responsible for loss of property in the residence halls due to theft, floods, interruptions of utilities, or other causes. The University does not refund rent for loss of or interruptions in utilities. A personal property insurance policy is recommended.

The $100 prepayment is refunded upon request not later than July 15 for Fall Quarter; October 15 for Winter Quarter; February 15 for Spring Quarter; and April 15 for Summer Quarter. Failure to cancel a reservation before the preceding date or failure to claim the room by 5 pm the day before Late Registration begins will cause forfeiture of the prepayment.

The current student who does not return to the residence hall the following quarter must advise the Housing Office of his/her plans and check out of the residence halls by the close of the current quarter. Academically suspended students must check out of the residence halls by Friday of the first week of the quarter.

The student who leaves the residence halls under authorization of the University and in compliance with University rules and regulations, and remains in school will forfeit the unexpended portion of room payment (rent) for the quarter. (Official check-out" and "conclusion of the use of the room" are defined as having moved all personal belongings out of the room and processed a check-out slip through the Housing Office and a move-out form through the Comptroller's Office.) A student is considered living in the residence hall room until he/she has officially checked out of the residence hall system, concluded the use of the room, and completed the processing of the move-out form with the Comptroller's Office. A student will continue to pay for room rent and meals until all official check-out procedures are completed. The student may continue to use the food service, if so desired. To do so, the student must notify the cashier in the Comptroller's Office of this decision when processing the move-out form. If the student does not wish to continue using the food service, the unexpended portion of payment for the pay period involved will be forfeited.

The student who resigns from the University will receive a 75% refund of room rent prior to the 9th class day and no refund of room rent thereafter. No refunds are given to students who are dismissed from the University or the residence halls for academic or disciplinary reasons.

All penalties and charges incurred during a quarter must be paid at the cashier's window in the Comptroller's Office before the end of the quarter that the charge(s) was incurred, or charges will be held against the student's record and the student cannot register.

Married Student/Family Housing

The University owns 42 apartments located on Tech Farm Road approximately a mile from the main campus off West California Street.

Applications are available from the Housing Office, Louisiana Tech University, Ruston LA 71272. A $25 application fee, which is not refundable, must accompany the application. Assignments are made on a first-come, first -served basis. One member of the couple must be enrolled in class to reside there. Rent is due on the first of each month and should be paid at the cashier's window in Keeny Hall. Students are expected to accept responsibility of making payments promptly; the school will not send a statement of payment due. Rent becomes delinquent on the 15th of each month, and a $25 late charge will be assessed. Failure to pay on time subjects the student to these penalties: dismissal from the apartment, the University, or both. Except for a heater, these apartments are unfurnished. Only electrical appliances are allowed. Before a key is issued, verification must be shown from the City of Ruston that utilities have been placed in the student's name. Only students and their children, if any, may occupy an apartment. No pets are allowed. A 30-day notice must be given to the Housing Department to vacate an apartment.

International Students and Faculty

The International Student Office provides the following assistance to international students and faculty:

1. Orientation to his/her new U.S. environment,

2. Personal advisement and educational guidance,
3. Processing immigration paperwork for practical training; transferring to Tech; work permission; replacement of immigration documents; and other immigration needs of international students. The International Student Director will answer questions concerning immigration procedures which affect international students and coordinate international student activities and cross-cultural programs. The International Student Office also provides some immigration services for foreign faculty members and staff. It serves as a liaison between the international population and the host community on the Tech campus and in Ruston. The International Student Office is located in Room 333, Keeny Hall.

University Health Center

The University Health Center has registered nurses on duty between the hours of 7:30 a.m. and 4:30 p.m., Monday through Friday. Services are offered free or with minimal charge to all students. Services include, but are not limited to, physical assessment of ears, eyes, nose, throat and upper respiratory; first-aid treatment for minor injuries; removal of stitches; blood pressure checks; and the administering of allergy and immunization shots. Limited lab work as well as crutches and heating pads are available. Referrals to medical doctors are made through a voucher system when indicated. Student medical histories are maintained by the Center. Services are located in South Hall; for more information call 257-4866.

Medical expenses for services incurred outside the Health Center are the responsibility of the student. See "Accident and Health Insurance" as described on this page.

Student Accident and Health Insurance

Accident insurance is provided to students through the Student Government Association by self-assessment paid at the time of fee payment. Details are provided in a flyer distributed at fee payment by SGA. In addition, students have the option of purchasing health insurance for their individual needs and/or for their dependents. Applications for this insurance may be picked up at fee payment or at the SGA office. The optional insurance becomes effective on the date the premium and application are received by the contracted carrier.

Counseling Services

The Office of Counseling Services is located in 310 Keeny Hall. Licensed Professional Counselors, and the consultation of a licensed psychologist are available to enrolled students who are experiencing personal/emotional, academic, or career concerns.

- **Personal/Emotional Counseling.** Personal counseling issues might include those related to adjustment to college, relationships, sexuality, anxiety, stress, anger, eating disorders, depression, and suicidal thinking.
- **Study Skills Development.**. Students are invited to work with a counselor to determine areas of strength and weakness in their academic strategies. Assessments are offered in both written form and via computer. Upon examination of assessments, the counselor and student determine goals for addressing such factors as time management, examination preparation, anxiety reduction, concentration and memory improvement, and motivation.
- **Career Decision Making.** Quarterly workshops and individual career counseling are offered to assist students in developing career decision-making skills, in assessing ability, personality, interest and values and in acquiring information about careers. A Career Resource Lab houses hundreds of current publications as well as a state-of-the-art computerized information retrieval system.
- **National Testing Center.** Information and/or registration material for national tests are provided through the Testing Center housed in Counseling Services. National standardized examinations offered through this Center are the following: ACT, AHPAT, CLEP, GRE, HOBET, LSAT, MAT, MCAT, NLN, PRAXIS, and TOEFL.

Counseling Services is accredited by the International Association of Counseling Services, Inc. and services are delivered free and under a strict code of confidentiality. For more information about any programs offered through Counseling Services, contact the office in 310 Keeny Hall or phone (318) 257-2488.

Career Center

The Career Center provides numerous resources and services to the students and alumni of Louisiana Tech University. Students are encouraged to participate in on-campus interviews and to attend seminars that assist in the development of job search skills. Seminars are offered quarterly on the following topics: Orientation, Writing an Effective Resume, and The Successful Interview. Business Dining Seminars are also conducted quarterly. Additional resources include job listings and a Tech Alumni Network. An extensive Career Library contains informational videos, employer literature, reference materials, professional journals, career education and planning information, and information relating to federal employment opportunities. The Career Center also maintains a departmental Web page (www.careercenter.latech.edu) for students, alumni, and employers. Annually, the Center sponsors Fall Career Day, Spring Career Day, Teacher Recruitment Day. Evaluations and letters of recommendation may be added to a confidential file at a student's request. Individual appointments are available to students and alumni with concerns about any phase of career planning and development.

The Career Center is located in Keeny Hall 337, (318) 257-4336.

Vehicle Registration

The University requires all faculty, staff, students, and employees who are in any way connected with the school to register their vehicle regardless of ownership and to secure and properly display a parking permit. All vehicles must be registered by the third day of classes for any quarter. Also, vehicles that are purchased or acquired during the quarter must be registered before parking on the campus. Only one vehicle may be registered per employee. See vehicle regulations for family or significant other visitor parking rules. Students may register more than one vehicle.

Vehicles may be registered and decals obtained in the Campus Traffic Office located in South Hall.

Each registrant will need to present a valid driver's license or other picture ID and vehicle registration certificate or bill of sale. All faculty, staff, and students are bound by parking and traffic regulations regardless of whether they register a vehicle. The pamphlet "Louisiana Tech Vehicle Regulations" may be obtained in the Traffic Office.

Student Conduct

Students at Louisiana Tech University are expected to conduct themselves in a manner that will not bring discredit but honor to themselves and the institution. Minimal standards of conduct are set forth in the pamphlet entitled "Code of Student

Rights, Responsibilities, and Behavior." Each student is required to become acquainted with the contents of this pamphlet which can be obtained in the Office of Student Life.

University Police Department

The Louisiana Tech Police Department enhances the University's mission by contributing the following:

- Contributes to campus safety by enforcing city, state and federal statutes which is accomplished through vehicular patrol, foot patrol, criminal investigations, narcotic investigations, and police cart patrol. Enhances the welfare of students by providing assistance as needed, i.e., providing escorts, providing traffic control, providing officers to increase safety at athletic and special events, and providing assistance in emergency situations
- Conducts public education seminars in child safety, drug education, theft prevention, and D.W.I. awareness
- Enforces behavioral standards for students as provided for in the Code of Student Rights, Responsibilities, and Behavior pamphlet.
- Operates a 24-hour information and communications center at the department.

Under Louisiana law, R.S. 17:1805, Louisiana Tech police officers have law enforcement authority including the power of arrest and are commissioned by the Department of Public Safety. All Louisiana Tech police officers are graduates of a P.O.S.T. certified basic police academy. Additionally, officers attend advanced training and update training as needed.

The Louisiana Tech Police Department employs 17 to 20 commissioned police officers, 2 secretaries and approximately 50 student employees.

The Louisiana Tech Police Department is located in South Hall on the corner of Tech Drive and Hergot Avenue. Any on-campus emergency, request for on-campus police assistance, or the reporting of on-campus criminal activity should be made to the Louisiana Tech Police Department at 257-4018. Patrol officers are radio-dispatched upon call to assist the public 24 hours a day, 365 days a year. Requests for police assistance may also be initiated with one button dialing on any of 21 emergency phones located on the campus. Criminal activity is investigated by the Patrol and Investigative Divisions of the Department, and offenders are subject to criminal prosecution and University action. Criminal activity may also be reported under the Louisiana Tech Crime Stoppers program at 257-4018. Louisiana Tech Crime Stoppers is a regular feature in the student newspaper. Additional procedures for responding to campus emergencies are outlined in the University Safety Manual.

The Louisiana Tech Police Department is a department in the Division of Student Affairs directed by the Chief of University Police who reports to the Vice President for Student Affairs. Additional information on the University Police Department may be found in the Student Handbook.

Student Activities and Organizations

There are over 150 student organizations on the Tech campus including Student Government Association, numerous service organizations, fraternities and sororities, religious organizations, Union Board (entertainment board) and a campus radio station (KLPI). Students are encouraged to find time for extra-curricular activities because they encompass development toward a balanced maturity. The faculty advise and assist in these activities and organizations which are based in the Student Activities Office in the Student Center.

A guide to student organizations is included in the Student Handbook, which is provided for every student. Copies may be obtained in the Student Activities Office and Student Life offices.

Student Financial Aid

Louisiana Tech University provides equal educational opportunities for all students, and this policy of equal opportunity is fully implemented in all programs of financial aid available to assist students in obtaining an education at Louisiana Tech.

An extensive financial aid program encompassing employment, loans, grants, and scholarships is available to assist students. Need, skills, and academic performance are carefully weighed to develop a "financial aid package" for qualifying students. Application for the various Federal Aid Programs and the Louisiana TOPS Program requires completion of the Free Application for Federal Student Aid (FAFSA).

Employment is available in a wide variety of forms to the student who is willing to work. Areas of work include but are not limited to clerical, maintenance, food service, laboratories, library, and dormitories. Pay rates are commensurate with the skill and experience required, and work is limited to avoid interference with academic pursuits. The University participates in the Federal College Work-Study Program designed to assist students with financial need in addition to employment available through individual departments on campus.

The student is advised to make inquiries at the Office of Student Financial Aid in person or by writing P. O. Box 7925, Ruston, Louisiana 71272-0029 in January prior to Fall enrollment.

Students must meet the requirements for "satisfactory academic progress" in order to be eligible for participation in the programs of student financial aid at Louisiana Tech University. Questions pertaining to what constitutes "satisfactory progress" may be directed to the Office of Student Financial Aid at Louisiana Tech University. The criteria for "good standing" and "satisfactory progress" and the consequences of failure to meet them successfully are applicable to the financial aid programs in a different fashion from regulations governing academic probation and suspension.

Satisfactory Academic Progress for Louisiana Tech Financial Aid Eligibility

Satisfactory academic progress policy is the term applied to the requirement imposed by the federal government regarding the measurement of grades and course completion to be eligible for federal financial aid. Federal requirements are found in 34 CFR Sections 668.16, 668.32 and 668.34. Louisiana Tech has defined the rules as follows:

Continuing and transfer undergraduate students must maintain a minimum 2.00 cumulative GPA.

Graduate students must maintain a minimum 3.00 cumulative graduate course GPA.

All students must successfully complete a minimum of 67% of the courses in which they enroll at Tech during the academic year. Students may not exceed the maximum hours allowed for the degree program as explained herein.

The percent completed is determined in the following manner: Beginning and Continuing students will have all courses in which they enrolled each quarter counted as attempted; **withdrawn, incomplete, and failed courses** are included. Courses initially enrolled in as **audit** are not eligible for financial aid nor are they counted in pursued hours. At the end of the Summer Quarter all courses attempted during the academic year at Louisiana Tech are totaled by credit hour. The courses successfully completed (earned) at Louisiana Tech are totaled by credit hour. ICP courses where Tech is the degree granting institution may be included as Tech courses. Courses successfully completed during the academic year (hours earned) are divided by all credit hours attempted during academic year. These hours are considered even if financial aid was not received while attempting them.

Transfer students must meet all standards defined at Tech **before** being eligible for aid. Transfer transcripts will be reviewed to determine total hours attempted at all prior institutions and compared to the maximum allowed at Tech for their intended major. Eligibility will be evaluated using incoming cumulative GPA, percent of course hours completed in most recent attendance period prior to enrolling at Louisiana Tech, and the aggregate hours attempted. If a student has exceeded the aggregate hours allowed for the degree program the student is entering, has a deficient cumulative GPA or has not completed the required 67% of courses attempted, he/she is ineligible for aid.

Disabilities Students who arrive at Louisiana Tech aware of learning or other disabilities should immediately contact the Office of Disabled Student Services so that appropriate accommodations can be made. A student with a documented disability and functional limitations is still held to the same academic expectations as other students. If the student is registered with the Office of Disabled Student Services and receiving appropriate accommodations, the student should be able to maintain satisfactory academic progress for financial aid eligibility purposes.

Academic Renewal Students granted academic renewal would still have all attempted hours considered when evaluating aggregate hours. GPA and percent completion rates will be based on courses attempted since renewal has been granted.

Academic year spans Fall, Winter, Spring, and Summer Quarters in that order. Satisfactory Academic Progress will be evaluated annually at the end of the academic year regardless of when attendance at Tech began.

Academic probation has no direct correlation to eligibility for federal financial aid.

Academic suspension Students are ineligible for financial aid while suspended. An explanation of cumulative grade point averages and their effect on enrollment is found in the *Louisiana Tech University Bulletin*. Contact the Registrar's Office for further information.

Developmental / Remedial courses are included in the annual percent completion calculation as hours attempted and, if successfully completed, hours earned. Developmental courses in excess of 30 hours are not considered as eligible for federal funds. The excess remedial hours will not be counted as hours attempted when establishing federal funding levels.

Repeated Courses are counted in hours pursued and, if successfully completed, hours earned.

Maximum hours attempted are considered when determining financial aid eligibility. These hours are considered even if financial aid was not received while attempting them. It does not matter where the hours were attempted, Louisiana Tech standards apply. The general rule is 150% of the hours required for the program of study in which currently enrolled. Students lose eligibility for future quarters and future award years after the quarter in which they exceed the maximum hours **during** the award year. To determine the maximum allowable hours for a specific program of study (major) refer to the University Bulletin, note the total hours required for the program and multiply that figure by 1.5

Additional degrees: Students seeking additional degrees are limited as follows.

Associate.....30 credit hours beyond prior degree
Bachelors.....60 credit hours beyond prior degree
Masters.....30 credit hours beyond prior degree

Students seeking a third Associate, Bachelor or Masters degree are not eligible for federal financial aid. Doctorates are considered terminal degrees thus no federal aid is available for a second doctoral program.

Students seeking double majors must complete their degree program for the primary major within the limits set for that major. Additional hours will not be allowed for double majors.

Students requiring more hours to complete their program of study may **appeal** for additional quarter(s) of federal aid eligibility. Refer to the section below entitled "Appeals for excessive aggregate hours" for additional information.

Repetitive Resignations/Unofficial Withdrawals Students who resign or unofficially withdraw (quit attending) Louisiana Tech two times during an academic year will have to appeal for continued eligibility for the remainder of the academic year.

Financial Aid Probation (New for 2002-2003)

Financial aid probation is possible for continuing Louisiana Tech students who have attempted fewer than 30 credit hours by the end of the academic year. Probation may occur for the following Fall and Winter Quarters only. When it is determined that the student failed to complete the requisite 67% of the courses attempted over the academic year or failed to achieve the required 2.00 cumulative GPA, the student will be placed on probation for the following Fall and Winter quarters. **Students deficient in both categories are not eligible to be considered for academic probation**. Students on probation will be evaluated at the close of the Winter Quarter. If they have not reached a 2.00 cumulative GPA **and** completed 67% of the courses attempted during the probationary period, their federal aid eligibility will be terminated for the remainder of the academic year and for future years until the student has reestablished eligibility. Students, when removed from probation, are subject to all other Satisfactory Academic Progress rules.

Reinstatement of financial aid eligibility is possible if the student meets the following requirements while ineligible for federal financial aid.

> Students must achieve a 2.00 cumulative GPA and successfully complete 67% of the courses attempted at Louisiana Tech University while ineligible for federal financial aid and earn a minimum of 8 credit hours.
>
> Graduate students must earn a 3.00 cumulative graduate GPA and successfully complete 67% of the courses attempted at Louisiana Tech University while ineligible for federal financial aid and earn a minimum of 6 graduate credit hours.

Requests for reinstatement should be made in writing using the Tech Appeal / Reinstatement form as early as possible after grades for the period are calculated. Reinstatements are not retroactive to earlier quarters; thus requests must be received no later than the last day to withdraw with a "W" in the quarter after regaining eligibility. Requests received after that day must be considered as a request for eligibility in the subsequent quarter. *Requests for reinstatement must be accompanied by an unofficial copy of the transcript which includes the quarter that reflects the achievement.*

Appeals for exceptions to the policy must be submitted in writing using the Tech Appeal/Reinstatement form *with all appropriate documentation and an unofficial copy of the most recent academic transcript* (available at the Registrar's office). Suggesting that the Financial Aid office contact doctors, professors or other persons for additional information is not considered adequate documentation. Appeals must be received no later than the first class day of the quarter. We recommend that you submit an appeal as soon as possible after the deficiency is identified so that the appeal can be evaluated before classes begin. A student may only appeal for a total of ***three*** times during an academic career at Louisiana Tech.

Appeals for excessive aggregate hours must include a letter from the student, which states the reasons for not achieving a degree before reaching the limit. A degree completion plan must be obtained from the student's advisor outlining the number of hours, specific courses and quarters needed to obtain a degree in the current program. *These documents and an unofficial copy of the current transcript must be furnished with the appeal.*

Additional guidance for submission of reinstatement requests or appeals is also provided on the reverse of the appeal form. This form can be obtained at the Financial Aid Office or on the web. www.latech.edu

Federal regulations frequently mandate amendments to established policies; consequently, financial aid participants (and potential participants) would be well-advised to maintain close liaison with the financial aid office regarding these requirements.

All applicants for federal financial assistance must complete their file in the financial aid office at least three months prior to the beginning of the quarter for which they seek to receive aid. Late applications will receive less favorable funding than those meeting deadlines. The following sources of financial assistance are available to eligible students, providing funds are available.

Return of Title IV Funds Policy

The Louisiana Tech University Financial Aid Office is required to administer a return of federal student aid funds that complies with the Higher Education Reauthorization Act of 1998. Federal financial aid includes the Federal Pell grant, Supplemental Educational Opportunity Grant, LEAP funds, Perkins loan, Stafford loans, and PLUS loans. The policy that follows complies with the federal requirements.

Title IV funds are awarded to a student under the assumption that the student will attend school for the entire period for which the assistance is awarded. When a student withdraws, the student may no longer be eligible for the full amount of Title IV funds that the student was originally scheduled to receive.

The Financial Aid Office recalculates federal aid eligibility for students who fail to attend, drop out, resign (officially or unofficially), or are dismissed prior to completing 60% of a quarter. Recalculation is based on the percent of aid earned using the following formula: *Number of Day Completed divided by the Total Days in the Quarter equals Percent Earned.*

The date used in the calculation is defined as the date of last attendance. The University must return any unearned aid that was applied to institutional charges. The student then owes the University the amounts returned to the federal aid programs. The student may also be required to return/repay some portion of the federal aid received as a refund by the student. For example, if a student was enrolled for 30% of the quarter, then the student is entitled to only 30% of the aid received; thus 70% of the aid must be returned.

Students who drop after 60% of the quarter has passed do not owe immediate paybacks at all!! *Please be aware that students must have attended at least one class after the 60% of the quarter.* If this date occurs after the completion of 60% of the quarter, the student is considered to have earned 100% of the Title IV aid received.

While this Return of Title IV Funds policy applies solely to students who receive federal financial aid, it must be understood that the Louisiana Tech University refund policy is also applied to all students whether or not they receive federal financial assistance. The student may owe a refund to the University on the basis of their refund rules. Details of the University refund policy are located in the "Racing Form" and quarterly "Expense Sheet".

Monthly Payment Options For Students and Families

Tuition Management Systems offers families several Monthly Payment Options to help make education expenses more affordable. The Interest-Free Monthly Payment Option enables families to spread all or part of the annual expenses over equal, monthly payments. There are no interest charges, and only a small annual fee. This plan includes life insurance protection covering the unpaid balance at no additional cost. Additionally, low-interest monthly payment options, including an unsecured loan, a home equity credit line, and the federally backed loans, are also available. Please contact Tuition Management Systems at 1-800-722-4867 or (401) 849-1550 for more information on these programs.

Federal Perkins Loan Program

A Perkins Loan is a low-interest loan designated to help undergraduate students pay educational costs. A student may

borrow up to a maximum of $15,000 during his/her undergraduate program of study. A new student borrower has a nine-month "period of grace" after the student ceases to be enrolled on at least a half-time basis at the University before payment must begin.

Subsidized and Unsubsidized Federal Stafford Loan Program (Formerly Guaranteed Student Loan Program)

Stafford loans are available for students meeting certain qualifications. Loans are made-up to $2,625 for first-year students, $3,500 for second year students, and $5,500 per year for undergraduate students who have completed two years. Students in a two-year program are restricted to borrowing $2,625 for the first year of the two-year program and $3,500 for the second year of the program, regardless of units earned prior to entry into the two-year program.

Aggregate loan limits are $23,000 for undergraduate loan borrowers.

After a student's application has been processed by the Office of Student Financial Aid and the student has completed an entrance interview, their Stafford loan is electronically certified and submitted for guarantee. They will receive a Master Promissory Note (MPN) from the Guarantee Agency, which they must complete with references and return to their lender, credit union, or savings and loan association. This process may take three weeks before funds are available. Under the Subsidized Stafford Loan Program, interest charges to the student and repayments begin six (6) months after the student is no longer at least a half-time student. In the Unsubsidized Stafford Loan Program, interest does accrue while the student is enrolled on at least a half-time basis, and students are required to make interest payments while in school or have the interest capitalized. To apply, the student must complete the Free Application for Federal Student Aid (FAFSA) and a Louisiana Tech Financial Aid Data Form.

Federal PLUS Loan Program

PLUS loans are meant to provide additional funds for undergraduate dependent students for educational expenses. Like Stafford Loans, they are made by a commercial lender such as a bank, credit union, or savings and loan association.

Parents may borrow up to the cost of education minus aid, per dependent student, per year.

Students should contact the Financial Aid Office for further information.

Federal Pell Grant Program

Authorized under the 1972 Higher Education Act this program provides for grants to students seeking a first baccalaureate degree. Grants range from $400 to $4,000 per year for full-time attendance.

Federal Supplemental Educational Opportunity Grant Program

This grant is a federal aid program that provides assistance, to the extent that funds are available, for students with exceptional financial need. Grants are available to undergraduate students, and priority consideration is given to Pell Grant recipients.

Louisiana Leveraging Educational Assistance Partnership

This program is a joint effort of the federal government and the State of Louisiana. The grants are available to persons who are bona fide residents of Louisiana and U.S. citizens. Awards will be made only to full-time students who meet the academic requirements and who have substantial financial need. Applicants must apply for federal aid using the FAFSA to be considered for the grant program. Current regulations provide for annual awards up to $1200 for nine-month attendance.

Veterans' Orphans Scholarships

Awarded to sons and daughters of deceased war veterans. Students should apply to the Department of Veterans' Affairs in their district.

Vocational Rehabilitation Grants

Vocational Rehabilitation is a public service program for physically and mentally handicapped individuals. To be eligible, a person must have a permanent disability which constitutes a job handicap. Students with disabilities are advised to contact the Department of Vocational Rehabilitation in their districts for consideration of their cases.

Academic Scholarships

Louisiana Tech University has a General Scholarship Program; and, in addition, each of the five colleges (Administration and Business, Applied and Natural Sciences, Education, Engineering and Science, and Liberal Arts) has its own scholarship program administered through the Division of Admissions, Basic and Career Studies. Scholarships are divided into the following categories:

Academic Scholarships are awarded on the basis of demonstrated ability--usually without regard to need.

Grant-in-aid and Service Awards. Frequently these are awarded on the basis of special skills and require the student to render a service to the University. Included in this category are scholarships in athletics, music, band, and academic department awards.

The Air Force Reserve Officer's Training Corps program offers a number of competitive scholarships to both men and women participants. This award may include payment of all tuition and fees, a per quarter allowance for textbooks, and a $150 per month tax-free cash allowance.

Students interested in applying need to submit a scholarship application with an application for admission, ACT or SAT score, high school and/or college transcripts, and a letter of recommendation to the Office of Admissions. Admissions will forward scholarship information to the colleges that the student has listed as his/her intended major. All applications submitted by December 15 for the following academic year will be given first consideration for all awards.

Waiver of Out-of-State Tuition

The University of Louisiana Systems Board of Trustees has authorized exemption of out-of-state tuition for certain non-residents of high academic ability. For more information about such waivers, contact the Office of Admissions.

Auxiliary Programs and Facilities

Athletics Opportunities

Louisiana Tech University is a member of the Western Athletic Conference. Louisiana Tech has been a member of the NCAA since 1951. Men's teams include football, basketball, indoor and outdoor track, baseball, cross-country, and golf. Women's teams are basketball, indoor and outdoor track, cross-country, tennis, softball, and volleyball. This well-balanced sports program provides year-round opportunities for faculty, staff, and students to enjoy athletics on the highest level of collegiate competition.

Barksdale Air Force Base Program

Louisiana Tech has offered an on-base degree program at Barksdale Air Force Base since September 1965. The program is designed for Air Force personnel whose military assignments make it impractical for them to earn college credit and complete a degree program in the traditional manner. Civilians are permitted to participate on a space available basis. On-base offices are maintained in the Base Education Center.

Sufficient courses are offered at Barksdale for a student to earn the Associate of General Studies, and the Bachelor of General Studies, and the Bachelor of Science in Electrical Engineering Technology. Courses necessary for the Alternative Secondary Teacher Education Certification are also offered. The Master of Arts degree may be earned in Counseling and Guidance and in Industrial/Organizational Psychology. The Master of Business Administration is also offered.

Center for Biomedical Engineering and Rehabilitation Science

In 1985, the Louisiana Board of Regents established the Center for Biomedical Engineering and Rehabilitation Science at Louisiana Tech as a University-wide Center of Excellence. Committed to education, research, and service, the Center's activities range from the study of disabilities to the application of technology to assist disabled persons. The Center is housed in the 63,000 square feet Biomedical Engineering Center complex. The building includes staff and administrative offices, educational facilities, research and assessment laboratories, and a dormitory for severely disabled individuals. Additional resources of the Center include wood, metal, and electronics shops, graphics and video studios, and various vehicles used in the Center's driver-training programs. Active at the state, national, and international level, the Center provides opportunities for faculty and students from throughout the entire university to participate in the activities and programs of the Center.

Experiential Education Programs

Experiential Education Programs at Louisiana Tech University are designed to provide quality structured, supervised experiences for qualified students in their chosen professional fields. Experiences include practica, internships, cooperative education, clinicals, and student teaching. In many majors, the experiences are degree requirements; in other majors, the experiences are optional for students who choose to participate. Such experiences will enhance employment opportunities for students and carry academic credit. These programs also serve as an opportunity to integrate the theoretical principles studied in the classroom with the practical knowledge gained from on-the-job performance. Experiential Education Programs are provided in each academic college for a variety of academic majors. The availability of department or college opportunities should be discussed with the respective program director or department head.

Continuing Education

Today's rate of increase in knowledge has made constant renewal of education a necessity. It is the responsibility of the University to play its part in meeting this need. The Division of Continuing Education, Louisiana Tech University, has affirmed its commitment to the role of public service. Annually, hundreds of people attend events such as non-credit seminars, workshops, and conferences offered through the University's Division of Continuing Education.

Hardwood Log, Lumber, and Tree Grading Workshop

The School of Forestry's Hardwood Workshop has been actively training participants from the forest industry for 47 years. The course is designed to assist those involved in the hardwood lumber industry (mill owners, sawyers, edger operators, inspectors, sales and office personnel), those involved in timber management (forestry technicians, foresters, refuge managers, and private landowners), and other interested persons (attorneys, etc.). Since 1977, a total of 752 people have attended. Based on our average of 30 participants per year, we have served approximately 1,410 people during the 47-year history of the workshop. On average, 6 states and 15 companies are represented at the workshop each year. The workshop is designed to present a working knowledge of the U.S. Forest Service log grading system and its relationship to lumber grades and product utilization. Attendees learn to recognize external defect indicators and their importance in hardwood logs. The application of log grading to standing timber is also covered.

Institute for Innovation and Development in Engineering and Science (I.D.E.A.S.)

The College of Engineering and Science renamed its Institute for Effective Engineering Teaching to the Institute for Innovation and Development in Engineering and Science (Institute for I.D.E.A.S.) and broadened its mission to provide for the professional development and growth of the faculty and staff. Through seminars, conferences, and workshops, the faculty and staff learn new and better ways to teach and administer to students, to improve their skills in scholarly activities, and to provide opportunities for professional and technical service-related ventures. Innovative teaching and learning techniques, use of technology both in a regular classroom setting and by distance learning, improved communication and teamwork techniques, program accreditation procedures, integrated curricula development, quality training, and outcomes assessment are just a few of the types of programs that are conducted through the Institute for I.D.E.A.S. The vision of the Institute is to help faculty and staff make a positive impact in their own personal development and to enhance their abilities to serve the students, the university, and the state.

Institute for Micromanufacturing (IfM)

The focus of this Institute is applied rather than basic research, emphasizing the design and development, the metrology, the inspection and testing, and the assembly and production of micron and submicron structures and devices. Related to these microstructures and devices, the following areas are emphasized: sensors, manufacturing techniques, systems, and structures. High priority is given to the transfer of these new

technologies to government, academia, and industry and to the education of students, particularly graduate students.

The mission of the Institute is

- to foster partnerships with industry;
- to provide diversity in process research and development activities yielding the best miniaturization technologies for the economic manufacturing of small products;
- to maintain an interdisciplinary and flexible organization capable of adapting to meet the needs of industry;
- to provide service, education and curricula development in microfabrication technologies.

The Institute for Micromanufacturing is composed of three components. The focal point is the component for research and development located on the Louisiana Tech University campus in Ruston. A second component is associated with the Center for Advanced Microstructures and Devices (CAMD) in Baton Rouge. This component performs research associated with the X-ray lithography micromachining capability at CAMD. The third component of the Institute is Technology Transfer and Engineering Research. The component is located in Shreveport/Bossier in order to take advantage of the unique opportunities and resources offered in this region. There is strong interaction among the three components of the Institute, and each of the components interacts to varying degrees with universities, industries, and research centers world-wide.

The main research facility is located on the Louisiana Tech University campus in north-central Louisiana. The 41,000 square foot (3,810 square meter) facility includes 20,000 square feet of environmentally controlled laboratory space with the capability for up to 5,000 square feet of cleanrooms. Laboratory and office facilities have been planned for industrial, governmental, or individual academic collaborators. The IfM is the only facility of its kind in the U.S., and industry representatives are encouraged to be resident at the IfM and to use the facilities to develop micromanufacturing processes for their products.

Inter-Institutional Cooperative Program (ICP)

Louisiana Tech University and Grambling State University entered into a cooperative program, the Inter-institutional Cooperative Program (ICP), effective the Fall of 1969. This program facilitates free student exchange between the two institutions, making it possible for students to enroll for courses at both schools. Faculty exchange between the two institutions is also a part of the program.

Application for courses to be taken on the cooperating campuses must be made at the institution where admissions requirements have been met and degree programs are being pursued. Credits gained as a "visiting" student may apply toward a degree at the home or matriculation school. The student's divisional dean or authorized representative must approve the course or courses selected and the course load. A copy of the student's report card bearing the official seal will be furnished to the home institution at reporting time by the visited institution. Credit from the ICP classes is reported on the home school's transcript as transfer work. To be eligible to participate in the ICP program, a student must pay "full- time" tuition at the home institution. Louisiana Tech Barksdale, extension classes, and credit examinations are not included in the ICP program.

Louisiana Tech Astronomy Facilities

The astronomy facilities of Louisiana Tech can be used for classroom and laboratory instruction and also for instructional demonstrations to visiting school groups and interested public groups. The facilities at the present time include a Planetarium on the main campus and an Observatory at the Research Park located about 11 miles west of the main campus. The observatory has an eleven inch reflecting telescope maintained by the Physics Department. An 10-inch Smidt-Cassagrainian mount telescope is also in use.

The Planetarium seats 120 people under its 40-foot diameter dome. A Spitz A4-type instrument projects the sun, moon, and planets as well as about 3,000 visible stars, giving a correct and realistic simulation of the celestial view. The apparent motion of the heavenly bodies is properly synchronized mechanically while speed and intensity are controlled by modern solid-state electrical circuitry.

Louisiana Forest Products Laboratory (LFPL)

The Louisiana Forest Products Laboratory of the Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, was created in 1992 by the state legislature. The Laboratory is housed in the LSU School of Renewable Natural Resources in Baton Rouge, and in the School of Forestry at Louisiana Tech University in Ruston. The Louisiana Tech division of the LFPL is located on the South campus in the Forestry Laboratory Building. It provides information on the quality of Louisiana's woody resource that will foster a better understanding of wood as a raw material for a wide range of manufacturing processes, encourage efficient and competitive use of wood within the state, and maximize the sustainability and productivity of our forests. Through close cooperation with the main LFPL at LSU in Baton Rouge, the Tech LFPL staff has provided technical assistance and technology transfer to local, state, and regional primary and secondary forest products industry. The development of new processes and the expansion of existing processes for manufacturing products from wood have been encouraged. Improvements in some processes have increased jobs and profit for existing Louisiana industries.

Louisiana Tech Computing Center

The Louisiana Tech Computing Center provides computing and consulting support for the instructional, research, and administrative activities of the University. The Center reports administratively to the Vice President for Academic Affairs.

The equipment and software supporting computing activities for the campus include an IBM Multiprise 2003 Model 207 mainframe running VM/ESA and MVS operating systems, 124 gigabytes of disk memory, four high-speed tape drives, a network of approximately 1500 nodes, and 128 33.6 KB dial-in ports. Language processors for FORTRAN, COBOL, PL1, and Assembler languages are supported on this equipment. Popular software systems supported include SAS and SPSS.

The Computing Center also operates three central laboratories with 144 workstations and laser printers for students (one lab is open 24 hours, 7 days a week) providing full Internet access and e-mail service. Several satellite labs of terminals are located in buildings around the campus and provide an additional 250 workstations for students.

The Computing Center is responsible for the campus Internet connection and routing. Additionally, the Center participates in campus WAN/LAN activities. The LAN equipment includes 25 Unix, 25 Netware, and 5 Microsoft NT servers, as well as campus routers, hubs and switches. All students and employees are provided computing accounts, e-mail service, and internet access. The Student Consultant Group serves as a technical support resource for the campus community, and the Center also provides computing professionals to consult with student and faculty computer users during office hours.

The Computing Center staff operates the administrative computing systems for the University. In addition, the staff provides systems analysis and programming support for the maintenance and development of administrative applications for University departments. The staff also assists with appropriate special projects and reports that are required of administrative and academic departments. A central Word Processing Center is operated for the support of administrative functions and research and publication materials.

Long-range planning for the computing and word processing needs of the University is an important part of the activity of the Computing Center. Projections of needs and goals for the integration of computing into institutional activities have been formulated and serve as the basis for fiscal year computing services plans.

Louisiana Tech Concert Association

The Louisiana Tech Concert Association (LTCA) seeks to enrich the lives of Tech students and members of the various communities within North Central Louisiana by bringing to Howard Auditorium the world's best music, dance, and theatre as performed by professional artists. LTCS is managed through the School of the Performing Arts. For more information regarding current programming, access the following websirt: http://performingarts.latech.edu .

Louisiana Tech Equine Center

Student instruction, reproductive research, therapeutic riding, and continuing education courses are offered as an integral part of Tech's popular equine program within the Department of Agricultural Sciences. The Equine Center, located on approximately 50 acres on Tech's South Campus, includes pastures for grazing and/or hay production., 12 paddocks, a 16-stall training barn, and an 8-stall stallion barn. The Equine Center typically maintains 60 horses of various breeds year round.

Louisiana Tech Museum

The Louisiana Tech Museum was established July 1, 1982, with the objectives of fostering scholarship at the University, encouraging research by faculty and students, helping educate area school children, and being a cultural center for the region. Numerous exhibits represent the fields of anthropology, archaeology, architecture, art, biological sciences, geology, history, and technology. More than 10,000 artifacts are included in the Indian collections. The museum is not just for viewing but is also a place where study and research can be conducted.

Louisiana Tech Nuclear Center

The Nuclear Center is a centralized facility to control the use of radiation and radioactive material on the Louisiana Tech campus. The Nuclear Center staff are available for consultation on the design of experiments involving radioactive material or radiation produced by machines. Operation of the Center is in accordance with a license issued to Louisiana Tech by the Louisiana Board of Nuclear Energy, Division of Radiation Control. The Nuclear Center encompasses a radioisotopes laboratory with student and research counting stations, a radioisotope equipment and storage room, office space, a radiochemical laboratory equipped to handle radioisotopes in many forms, a nuclear spectroscopy laboratory, a low-level laboratory, and a gamma irradiation facility. The gamma irradiation facility contains over 15,000 curies of Cobalt 60 and is capable of supporting numerous projects requiring high doses of radiation.

Louisiana Tech Public Service Information Center

The Center, which is housed in the Research Division of the College of Administration and Business, maintains and processes data from the 1970, 1980, and 1990 Censuses of Population and Housing as well as personal income data furnished by the U. S. Bureau of Economic Analysis. Computer programs and projects have been developed to generate demographic and economic analyses for the State, regions in the State, and selected areas of the Nation. Short reports, articles, and research projects are prepared, both on an in-house and on a contractual basis, for local, state, and regional organizations.

Louisiana Tech Speech and Hearing Center

The Louisiana Tech Speech and Hearing Center provides diagnostic evaluations and treatment for Louisiana Tech students, as well as individuals of all ages with speech, language, and/or hearing disorders. Located in Robinson Hall, the Center accepts referrals from all sources for its services, which include speech, language, and hearing evaluation; hearing-aid evaluation/dispensing; speech-language therapy; and aural rehabilitation. These services are provided by graduate student clinicians under the direct supervision of faculty who are licensed and hold the Certificate of Clinical Competence in Speech-Language Pathology and/or Audiology awarded by the American Speech-Language-Hearing Association.

Louisiana Tech Teachers' Institute

The Teachers' Institute reflects Louisiana Tech University's long-standing commitment to promoting and enhancing the quality of elementary and secondary education. The primary purposes of the Institute are to provide a formal linkage between faculty in Applied and Natural Sciences, Liberal Arts, Engineering and Science, Business, and Education with the public school teachers; to provide a university structure for the development of faculty joint projects; and to provide an administrative structure for the development of grant proposals. Faculty expertise in the various discipline areas are made available to teachers through workshops, courses, and various other activities. Specifically designed courses are taught by the faculty to expand the teachers' knowledge base and to up-date them on the latest developments in the field.

Louisiana Tech Trenchless Technology Center (TTC)

The Trenchless Technology Center (TTC) is a university/industry cooperative research center under the College of Engineering and Science. The TTC was established September 1989 to assist in the development of trenchless technologies through basic research, applied research, and technology development activities coupled with educational, outreach, and technology transfer programs. The Center has a small core staff consisting of the Director, an administrative assistant, and a technician. The research activities are conducted by an interdisciplinary group of approximately 25 faculty affiliated with the Center together with graduate students, university technical support staff, and the other industry and/or government partners in the research programs.

The Center has had very active research and technology transfer programs in the areas of pipeline rehabilitation, microtunneling and pipe jacking, and horizontal directional drilling. Market studies for various areas of trenchless technology and for specific companies have also been conducted. The Center is currently involved in two new research and demonstration programs in the area of trenchless pipe replacement (pipe bursting), several projects studying the long-

term performance of pipe lining systems, and a research project related to the management of sewerage systems. Two state-funded exploratory research programs in the soil mechanics area are also underway.

The Center is housed in the main engineering building of the Louisiana Tech campus. The Center has a strong collection of research and informational materials related to trenchless technology and the former library holdings of the Underground Space Center at the University of Minnesota covering a broad range of issues relating to the design, construction, and use of underground facilities. The Center's research utilizes several research facilities on and off campus including a Pipeline Rehabilitation Test Facility located approximately 2 km. from campus designed to provide the ability to test the short- or long-term pressure response of a variety of pipes and pipe lining systems; and a Field Test Facility located on the Louisiana Tech Farm used for a variety of field tests on trenchless technologies.

Lomax Hall Horticultural Conservatory

The public is welcome to visit the Lomax Hall Conservatory and greenhouses. The Conservatory contains a permanent collection of tropical flowering and fruiting ornamental plants enhanced by seasonal displays of poinsettias, chrysanthemums, bulbs, and bedding plants. The greenhouses are used for educational and teaching activities including propagation, production, and demonstration. The Agricultural Sciences Department provides assistance with individual or group tours.

Mobile Automated Learning Laboratory (MALL)

The Mobile Automated Learning Laboratory was established in Louisiana as a cooperative effort between business/industry and education. The MALL, donated by Entergy Corporation and Louisiana Power and Light, is staffed and jointly managed by Louisiana Tech University and Grambling State University.

The project goal of the MALL is to provide a better educated workforce by serving the needs of the undereducated adult. The mission of the MALL is to deliver instruction within both community and business/industry sectors based on the theory that a better educated workforce will enhance economic development.

The MALL is a 28-foot motorcoach equipped with computer and interactive video disk stations. The automated instructional delivery system uses software packages containing basic skills programs in reading, language arts, mathematics, and life skills. The programs are designed for adults and provide skill development from adult basic education through the skills needed for the General Educational Development (GED).

The MALL travels to worksites in north Louisiana averaging 14 hours a day, five days a week and four hours on Saturday. The staff includes one full-time coordinator and one graduate assistant from each of the two universities.

The MALL is one of the nation's most innovative workplace literacy projects and was featured in PBS's Innovations series during an episode entitled The Future is Now: Technology in Education. The MALL received the Point of Excellence award from Kappa Delta Pi for outstanding contributions to education and the Thomas P. Harwood, Jr. Excellence in Education award presented by the National Association of Regulatory Utility Commissioners.

NASA Educator Resource Center (NASA ERC)

The NASA Educator Resource Center is a repository of exemplary science and math materials made available to educators by NASA. The ERC is housed in the College of Education and is the latest component of SciTEC.

Pre-Professional Programs

Louisiana Tech University provides excellent preparation for the student planning a career requiring advanced study in specialized programs.

Pre-Law

Because of the diversity and complexity of this discipline, there is no single curriculum or course of study which is prerequisite to or guarantees success in law school. Students who intend to study law are referred to the Pre-Law concentration in the Department of Social Sciences, College of Liberal Arts. A choice can then be made based upon personal preference and future goals.

Pre-Medicine and Pre-Dentistry

In pre-medical and pre-dental preparation, a student's major need not be one in a field of science; however, experience shows that the majority of applicants to medical or dental school will have a science major. Students are urged to follow their personal inclinations in selecting a major, recognizing that a physician or dentist should have a broad educational background.

The Pre-medical and Pre-dental Advisory Committee is composed of faculty members representing the disciplines of Biomedical Engineering, Biological Sciences, Chemistry, and Nutrition. Students should select a major and plan a course of study in consultation with a pre-medical or pre-dental advisor.

The minimum requirements for most medical and dental schools include one year each of Biology with lab, General Chemistry with lab, Organic Chemistry with lab, General Physics with lab, Mathematics, and English. Also, applicants are required to submit scores on the Medical College Admission Test (MCAT) or the Dental Admission Test (DAT). The test should be taken in the Spring of the junior year prior to application. It is strongly suggested that these examinations not be attempted until courses in genetics, comparative anatomy, animal physiology, organic chemistry, biochemistry, and physics have been successfully completed.

In the Spring of each calendar year, personal interviews are conducted by the Pre-medical and Pre-dental Advisory Committee for the purpose of evaluating those students preparing to make formal application to either dental or medical school. This interview is a very important part of the student's application process. After the interview, the Committee prepares recommendations that will be forwarded to the Admissions Committee of the professional schools to which the student has applied.

Alpha Epsilon Delta (AED) is a national pre-medical and pre-dental honor society which is open to students possessing a minimum grade point average of 3.20 and at least 40 semester hours of course work.

Pre-Veterinary Medicine

Students wishing to pursue a career in veterinary medicine are referred to the Pre-Veterinary Medicine Concentration in the Animal Science curriculum. Those who have earned an exceptional grade point average and an acceptable score on the Graduate Record Examination (GRE) may wish to apply for admission to veterinary school during their junior year. These students may become candidates for the B.S. degree in Animal Science after completing the first year of work at a veterinary school.

For assistance in planning a course of study, students should consult with the Pre-Veterinary Medicine advisor in the

Department of Agricultural Sciences, College of Applied and Natural Sciences.

Other Health Science Programs

Louisiana Tech offers degree programs in the health science areas, including Nursing, Dietetics, Health Information Management, and Medical Technology.

Nursing: Advisors for the Associate Degree program in Nursing are located in the Division of Nursing, College of Applied and Natural Sciences.

Dietetics: Programs in Dietetics include an undergraduate didactic program, a post-baccalaureate internship, and a graduate program. These are found in the School of Human Ecology, College of Applied and Natural Sciences.

Health Information Management: Both an Associate Degree program in Health Information Technology and a baccalaureate program in Health Information Administration have advisors in the Department of Health Information Management, College of Applied and Natural Sciences.

Medical Technology is a baccalaureate degree program located in the School of Biological Sciences, College of Applied and Natural Sciences.

In addition, there are many other health careers for which Louisiana Tech can offer prerequisite courses to prepare students to enter a professional program at another institution. These pre-professional areas are listed below with the department and college in which they are offered:

Cytotechnology, nuclear medicine technology, respiratory therapy, histological technology, physician's assistant, occupational therapy, physical therapy, surgical assistant, and radiologic technology are in the School of Biological Sciences, College of Applied and Natural Sciences.

Pre-Optometry and **Pre-Pharmacy** are in the School of Biological Sciences, College of Applied and Natural Sciences.

Pre-Professional Speech-Language Pathology is in the Department of Speech, College of Liberal Arts.

Students interested in any of the health science programs named above should contact the department head in whose department the curricula are shown.

Prescott Memorial Library

Centrally located in the heart of campus activities, Prescott Memorial Library offers a full array of information resources and services.

The Library houses an extensive and well-balanced collection of informational sources including over 1.5 million volumes, over 2,700 current periodical subscriptions, over 35,000 maps and extensive electronic resources. Tech's library is one of only fifty-three U. S. Government Regional Documents Depositories, and it is a depository for Louisiana State Documents, USGS Maps, and Department of Energy Contractor reports. Other facilities within the library include the Electronic Reference Center with twenty computer workstations for research, the Electronic Classroom with workstations for library instruction and the Student Technology Laboratory with fifty plus computer workstations providing Internet access and productivity software.

Many library services and resources are located on the main floor, easily accessible upon entering the building. Included on the main floor are reference, government documents and reserve book collections, as well as the Electronic Resource Center, the Circulation Desk, and to assist with reference inquiries, the Information Desk.

Third floor contains the complete periodical collection including microforms and the Forestry Library. Upper floors (five-nine) house the main book collection and provide quiet study space for group and individual use.

Located on fourth floor are collections for more specialized research. The American Foreign Policy Center is a continuing collection of microfilmed primary source material for the study of U.S. foreign policy. The Department of Special Collections, Manuscripts, and Archives is comprised of the University Archives, the Forestry Archives, the William King Stubbs Architectural Archives, the Camp Ruston collection, and other manuscr8ipt collections documenting the history of the University and the region, as well as rare books, maps, and other materials.

The library's faculty and staff welcome the opportunity to serve the students and faculty of the Louisiana Tech University academic community. The library home page is http://www.latech.edu/tech/library .

Research Divisions

The participation of both faculty and students in academic and contract research is strongly encouraged at Louisiana Tech University. Toward this end, formally organized divisions of research associated with each college have been charged with the responsibility of coordinating and expediting research activities in their respective colleges. The Directors of the College Research Divisions are charged with the responsibility of coordinating research activities. Numerous graduate students perform research under the direction of members of the graduate faculty. Contract research for local, state, and national governments, industries, and foundations is effected regularly.

Science and Technology Education Center (SciTEC) is an active outreach program of the College of Education organized to serve the surrounding school systems and communities. Activities of the Center include six broad initiatives; professional development programs for inservice teachers; collections of exemplary math and science materials; exemplary undergraduate math and science education; the IDEA Place; the NASA Education Resource Center, and community outreach activities. SciTEC activities are supported exclusively by external funds awarded by such agencies as the National Science Foundation; the Math Science Education Act (MESA); the Louisiana LEARN Commission; the Louisiana Systemic Initiative (LaSIP); the Louisiana Collaborative for Excellence in the Preparation of Teachers; and private foundations such as the Toyota Foundation and the Rapides General Hospital Foundation.

Technology Transfer Center-Shreveport is located in a new modern educational facility with distance learning capabilities. Louisiana Tech University offers selected undergraduate and graduate coursework, workshops, and conferences addressing the educational needs of northwest Louisiana. The Technology Transfer Center serves as a partner with business, industry, and the medical community in economic development activities related to engineering and technology.

The IDEA Place (Investigate, Discover, Explore, Ask) is a hands-on children's museum designed to provide children and adults an opportunity to experience the excitement of learning about mathematics and science through interactive activities. School groups visit on field trips while pre-service education majors serve as guides. Education majors are encouraged to interact with students and gain valuable pre-student teaching experiences as children explore a variety of phenomena ranging from geologic digs to reflecting in a kaleidoscope.

The essence of the IDEA Place is its interactive exploration of scientific phenomena. The Center offers exhibits on such topics as mechanics, electricity, optics, perception, geometry,

and geology and allows visitors to initiate contact with specially constructed bits of the scientist's universe. Approximately 100 children each week visit the IDEA Place. They come to campus from schools across north and central Louisiana and south Arkansas.

Louisiana Tech University Center for Applied Physics Studies (CAPS)

The mission of the Louisiana Tech University Center for Applied Physics Studies (CAPS) is to provide a world-class, integrated engineering and physics educational and research environment, thereby creating opportunities for interdisciplinary studies, the sharing of resources, and the transfer of technology from basic science to engineering applications. The CAPS program, through the use of multidisciplinary research and teaching efforts, generates a profile of both engineers and physicists who are well-trained to enter a broad spectrum of careers in both physics and engineering.

The CAPS multidisciplinary research and education program combines the strengths of researchers and students from particle physics, biomedical engineering, mechanical engineering, and the Institute for Micromanufacturing (IfM). As a participant in CAPS, each member and student spends a portion of his/her time in cross-collaborative efforts in areas outside of his/her traditional area of expertise. For each project, multidisciplinary research teams are assembled consisting of undergraduate and graduate students, postdocs, faculty, and collaborators from other institutions, national labs, and industry.

The major research efforts of CAPS currently span the areas of particle physics, micromanufacturing, microfluidics, and biomedical sensors. Each of the areas has received funding from agencies such as the NSF, NASA, Louisiana Board of Regents Support Fund, DoE, and Louisiana-NASA Space Consortium.

The Particle Physics Group within CAPS is involved in research in high energy, nuclear, and astro-particle physics with major experimental projects at Fermilab, the Thomas Jefferson National Accelerator Facility (TJNAF), Brookhaven National Lab, and the Los Alamos National Lab. A CAPS research team is currently developing a Pizellated Cesium Iodide metal array coupled to a fast-timing bidirectional CCD in collaboration with LSU for use on a Gamma-Ray Balloon Borne Imaging Experiment and for use in Positron Emission Tomography (PET).

The Center is located on the Louisiana Tech Campus in the Engineering Annex. The CAPS facilities consist of a DEC Alpha-based computer system, a PSpice-based Electronics Design Station, an AutoCAD Mechanical Design Station, a Detector Development Test Lab, and a Cosmic Ray Test Stand with CAMAC, VME, and FastBUS based Data Acquisition Systems.

Early Childhood Education Center

The Louisiana Tech University Early Childhood Education Center, operated by the School of Human Ecology, is a model education program for three- and four-year-old children. The center offers two half-day sessions during Fall, Winter, and

Spring Quarters. The center serves as a student teaching site for students enrolled in the Early Childhood Education concentration. In addition, a variety of students from a number of disciplines observe and participate in educational programming at the center. The center is accredited by the National Academy of Early Childhood Programs.

Rural Development Center

The Rural Development Center of Louisiana Tech University serves as a clearinghouse for information and outreach activities in response to development needs in rural areas. The purpose of the Rural Development Center is to be an advocate for rural development, to be a focal point to which needs may be identified and assistance requested, and to be a clearinghouse through which relevant information may be disseminated.

For additional information, contact: Dr. Kenneth Rea, Rural Development Center, Louisiana Tech University, P.O. Box 3188, Ruston, LA, 71272

Study Abroad Programs

Louisiana Tech University encourages its students to participate in varied educational experiences including academic programs that combine the culturally enriching benefits of travel outside the United States. Currently, formal program agreements include (1) the London Seminar in International Finance and Business, offered through a consortium including the University of Colorado, Arkansas, Kansas, Nebraska, Wyoming, and Colorado State, and (2) CODOFIL/MICEFA accords providing opportunities for study at Universities of Paris, France. For additional information about study abroad opportunities, contact Dr. Dennis Minor, Director of Study Abroad Programs at Louisiana Tech University's Study Abroad Office, P.O. Box 3044, Ruston, LA 71272; or by calling (318) 257-2660.

London Seminar in International Finance

Louisiana Tech University, in cooperation with the University of Colorado, is pleased to offer interested students an opportunity to study in London, England, in mid-Summer each year. The program, held during the month of July, consists of approximately forty lectures and discussion sessions plus weekly visits to major financial and political institutions in London.

The seminar covers three major areas: the political and economic conditions for doing business in London and Europe, the major international financial markets and financial institutions of London, and the European Union. The seminar concentrates on the integration of the European community and the financial, business, and political consequences of this integration on Europe, the United States, and the rest of the world.

The program's focus makes it appropriate for any advanced undergraduate or graduate student in finance, international business, economics, political science, or international relations.

The program is limited to twenty-four students to make it a genuinely interactive seminar. Six semester hours credit are offered to participants. Besides lectures and field trips, a major research paper will be required, and it will be due October 15th. Applicants must meet certain prerequisites, and applications will be accepted beginning November 1 until the program is full, or through March 15.

A personal interview (by telephone, for those applying from schools other than the University of Colorado at Boulder) is required of all applicants. Interested students may consult the web site www.colorado.edu/OIE/Study Abroad ; by writing "London Seminar," Academic Affairs, P. O. Box 3188, Louisiana Tech University, 71272; or by contacting Dr. Dennis Minor, Director of Study Abroad Programs at Louisiana Tech University's Study Abroad Office, P.O. Box 3044, Ruston, LA 71272; or by calling (318) 257-2660.

CODOFIL/MICEFA

This exchange program was established by the Consortium of Louisiana Universities and Colleges (CODOFIL) to provide Louisiana university students a unique opportunity to study in a francophone country. The Interuniversity Mission for the

Coordination of Franco-American Exchanges Paris-Ile de France (MICEFA) is a Consortium of universities in Paris. The agreement allows a student to spend up to one academic year in a French university at a price comparable to what the student would pay for studying here in Louisiana.

A selected student will pay all of tuition and administrative fees required by the home university. In exchange, the student will be able to attend one of the participating French universities without paying further fees. However, the student is responsible for travel expenses, room, board, and other expenses. Participating students must have completed two years of university level French courses.

For information on this exchange program, contact Dr. Tom Lewis, Foreign Language Coordinator, School of Literature & Language on campus (318/257-4748).

Division of Admissions, Orientation, Basic and Career Studies

Administration

Jan B. Albritton, Director

The Division of Admissions, Orientation, Basic, and Career Studies serves as a total academic support unit for entering freshmen. While entering freshmen may choose to go directly into one of the five academic colleges on campus, students who are undecided about a major enter Basic and Career Studies. Academic advising, personal counseling, interest testing, and decision-making workshops are available to assist students in making academic decisions. Students may also enter Basic and Career Studies when considering a change in majors.

At any given time, should a student fail to meet the specific requirements of a college, the student may be placed into Basic and Career Studies until grade point and course requirements are met.

Summer Orientation

An orientation and registration program for all new freshmen is held each Summer preceding Fall registration. The Summer sessions, conducted by the Division of Admissions, Basic, and Career Studies, are open to all beginning freshmen who have graduated in May of that calendar year and who have received official notice of acceptance to Louisiana Tech University.

The purpose of the orientation and registration program is to enable the entering student to become familiar with the University, its academic programs, and major courses of study, and to explore educational and vocational interests and goals. Each student will select courses for the Fall Quarter and complete registration, except for payment of fees.

The objectives of the program are 1) to introduce the student to Louisiana Tech University and make the transition from high school a smooth and orderly process; (2) to provide the student with academic direction and more personal attention through faculty advising and counseling; (3) to acquaint the student with opportunities, responsibilities, and regulations of the University; (4) to register the student for classes with the exception of payment of fees (fees will be paid at the beginning of the Fall Quarter); and (5) to acquaint parents with University standards for students and provide an overview of Louisiana Tech University.

Special orientation sessions for transfer students are also conducted.

Developmental Education Program

This program is intended to assist academically underprepared students in developing their abilities to meet the requirements of college-level courses. The components of this program are courses numbered 099 in English and mathematics.

A student who places in any of the developmental (099) courses must register in those courses if there are openings available in them before he/she registers for any college-level courses. All courses in the Developmental Education Program should be completed in the first four quarters of attendance for full-time students. A maximum of three attempts at a given developmental course will be allowed. The student will be dismissed from the University if this time limit is not met.

Class attendance in the Developmental Education Program is mandatory. After four (4) unexcused absences, the student will automatically be given a grade of "F" in the course. Withdrawal from the developmental education classes will not be permitted unless there are extenuating circumstances. If he/she needs to reduce his/her course load, the student will be required to drop any regular courses before any courses in the Developmental Education Program are dropped.

No credit is allowed in any curriculum for any courses with a catalog number beginning with zero (0) (e.g., English 099).

Scholarships

Louisiana Tech offers scholarship awards through the Admissions Office, as well as through the academic colleges and departments. The deadline for applications is December 1 prior to the year of enrollment. The General Scholarship Form qualifies students for all types of scholarships including those offered through the academic areas.

"TOPS"

Louisiana's Tuition Opportunity Program for Students (TOPS) is a comprehensive program of state scholarships and one of the most innovative and progressive student assistance programs in the nation. TOPS has five components. See the table for the eligibility criteria of each component.

How & When to Apply for TOPS

Students must apply for all TOPS awards by submitting that version of the Free Application for Federal Student Aid (FAFSA), which corresponds to the year the student plans to enroll in a postsecondary school. For example, if the student plans to enroll in a Louisiana postsecondary school in school year 2002-03, submit the 2002-03 version of the FAFSA. He/she must enter the name of a school located in Louisiana for the application to be considered. The FAFSA may be filed after January 1 and must be received by the federal processor before July 1st. A FAFSA may be obtained from high school guidance counselors or college financial aid offices or by calling the Louisiana Tech Office of Admissions at 1-800-LATECH1 (e-mail bulldog@latech.edu) or the Louisiana Tech Office of Financial Aid at (318) 257-2641 (e-mail: TECHAID@ltfa.latech.edu).

Department of Air Force Aerospace Studies

Professor of Air Force Aerospace Studies

Col. Ray T. (Tom) Garza

General

Air Force ROTC is open to all students in any major pursuing a bachelor, master, or doctorate degree.

Purpose

The Mission of Air Force ROTC is to train students to become future leaders in the U.S. Air Force. AFROTC provides instruction and experience to all cadets in a diversified university environment so they can graduate with the knowledge, character, and motivation essential to becoming leaders in the world's greatest and most respected Air Force. Individuals who successfully complete either the two-or four-year program will be commissioned as Second Lieutenants in the U. S. Air Force.

Objectives

Air Force ROTC Detachment 305's objective is to recruit, select, educate, and commission quality officer candidates.

Requirements for Admission

General Military Course (freshmen and sophomores): Enrollment requirements are as follows: 1) possess good moral character, 2) must meet age requirements for commissioning, 3) be medically qualified, and 4) be accepted by the University as a regular full-time student.

Professional Officer Course: (juniors and seniors) Students are selected for the POC on a competitive basis. In addition to those requirements mentioned for the GMC, entrance into the POC requires that a student be a U. S. citizen; meet mental and physical requirements for commissioning; have satisfactorily completed approximately 60 semester hours toward his or her degree; and be in good standing in the institution. Those enrolled in the POC will sign an oath of allegiance to the U. S. and receive a monthly monetary stipend.

Application Requirements

There is no application procedure for the four-year program. Students may simply register for Air Force ROTC in the same manner and at the same time they register for other college courses. Any student wishing to apply for the two-year program should contact one of the active duty officers on the 14th floor of Wyly Tower.

Four-Year Program: This is divided into two distinct categories--the General Military Course (GMC) and the Professional Officer Course (POC). Any university student may enroll in the GMC. Enrolling in the GMC incurs no military obligation unless on scholarship status. Students may then compete for entry into the POC during their last two years of college. Selection into the POC is highly competitive and is based upon qualification after an Air Force medical examination, scores achieved on the Air Force Officer Qualifying Test (AFOQT), grade-point-average, physical fitness test, and successful completion of a Field Training course.

Two-Year Program: The two-year program consists of the POC--the last two years of the four-year program. The basic requirement is that applicants have two academic years remaining at either the undergraduate or graduate levels, or a combination of both after the completion of the Field Training course.

Applicants seeking enrollment in the two-year program must pass an Air Force physical exam. They are also evaluated on grade point average, scores achieved on the AFOQT, physical fitness, and a personal interview.

Since the processing procedure must be completed in advance of intended enrollment, interested students must apply early in the academic year preceding the Fall Quarter which they intend to enter the program. Application should be made in writing or by a personal visit to an officer on the 14th floor of Wyly Tower.

Leadership Laboratory Training

In addition to academic training, enrollment in the corresponding Leadership Laboratory is open to students who are members of the Reserve Officer Training Corps or are eligible to pursue a commission. Leadership Laboratory consists of physical, military, and leadership training including the operation of the Cadet Corps. The Cadet Corps is comprised exclusively of cadets. All plans and programs are developed and executed by The Cadet Corps.

Field Training

All cadets must complete Field Training which consists of academic work, orientation to the Air Force environment, and traditional military training. Cadets in the two-year program must, by law, attend five weeks of Field Training prior to POC entry. Four-year program cadets attend four weeks of Field Training, normally between their sophomore and junior years.

Requirements for Commission

Upon completion of the AFROTC Professional Officers Course and receipt of a baccalaureate degree, cadets are eligible for commission as Second Lieutenants in the United States Air Force.

Monetary Allowance While in the POC

All POC members receive a monthly tax-free stipend during this two-year course. Currently students enrolled in the first year of the POC (typically juniors) receive a $350 monthly stipend while students enrolled in the final year (typically seniors) of the POC receive a $400 monthly stipend.

College Scholarship Program

Each year the Air Force awards a number of four-, three-, and two-year scholarships on a competitive basis to highly qualified students. Scholarships provide full tuition, most laboratory fees, textbook, and incidental fees, and out-of-state fees if applicable, plus $250 to $400 per month for 10 months each year the scholarship is in effect. Louisiana Tech supplements high school AFROTC scholarship winners and in-college scholarship recipients with full room and board for all four years regardless of the length of their scholarship as an incentive for coming to Tech. A $3,000 per year POC Incentive Scholarship is offered to POC cadets not already on an AFROTC college scholarship in any four-year degree program, but they must not turn 31 years of age before Dec 31 of the year of commissioning.

Books and Uniforms

All uniforms and textbooks required for AFROTC courses are furnished by Louisiana Tech and the U. S. Air Force. Each member of AFROTC will make a refundable deposit of $10.00 to cover possible uniform loss or damage.

Extracurricular Activities

AFROTC sponsors a number of organizations that provide avenues for further personal development for qualified and interested cadets.

Arnold Air Society. The Emmett O'Donnell Squadron of the Arnold Air Society is an organization dedicated to promoting a better understanding of the role of airpower in the aerospace age. This is a national honorary society limited to selected cadets who demonstrate outstanding academic and leadership traits.

Silver Wings Society. Silver Wings Society is a national honorary community service organization sponsored by the Arnold Air Society and the Air Force Association open to any student who meets the flight's qualifications. There is no requirement to be a cadet or member of ROTC to join, and no commitment is incurred. These patriotic students work closely with the Arnold Air Society. They support Cadet Corps activities and promote the USAF and AFROTC through community service.

Honor Guard. The Valkyrie Honor Guard is a military group composed of cadets who perform a variety of ceremonial functions. Those include providing a color guard for campus and civic activities, giving precision drill exhibitions, and competing at the national level in drill competitions.

Orientation Flights and Air Base Visitation. Members are afforded opportunities to fly in military aircraft for purposes of orientation and familiarization. Air Force base visitations are also offered and encouraged.

Formal Military Ball. Cadets sponsor a formal Military Ball annually for the members of the Corps and their invited quests.

Intramural Sports. AFROTC sponsors teams and individuals in all campus sports events.

Housing. The University has designated the 10th floor of Neilson (for males) and the 3rd floor of Harper (for females) as AFROTC floors. All cadets who reside on campus are encouraged to live on these floors, but the choice to do so is strictly voluntary.

University of Louisiana-Monroe (ULM) Students. Air Force ROTC is open to ULM students with all tuition fees waived by Tech provided they take only Air Force ROTC courses.

Academic Credit. The classroom work in both the General Military and Professional Officer Courses is classified as elective work and is credited in varying amounts, depending on the student's degree program. Students should consult with the dean of their particular college if in doubt of the amount of credit allowed.

Aerospace Studies Curriculum Requirements

Freshmen Year
Aerospace Science 125, 126, 127.....3
Leadership Lab 155, 156, 157.....0
English 101 (AFROTC. Scholarship Recipients).....3

Sophomore Year
Aerospace Science 225, 226, 227.....3
Leadership Lab 255, 256, 257.....0
Mathematics 101 or higher.....3

Junior Year
Aerospace Science 331, 332, 333.....6
Leadership Lab 351, 352, 353.....0

Senior Year
Aerospace Science 431, 432, 433.....6
Leadership Lab 451, 452, 453.....0
Graduate with Academic Degree

Minor in Aerospace Studies

This minor consists of 12 credit hours of upper-level ROTC classes (331, 332, 333, 431, 432, and 433) and 9 credit hours in one of the following areas of study (special authorization can be given by AFROTC to substitute new courses or courses offered on a one time basis that complement the minor): All courses applied toward the minor must be completed with the grade of "C" or higher.

History

313 Military History, 402 History of American Foreign Policy, 466 Contemporary America, 467 America 1960 to the Present, 472 History of American Ideas.

Political Science

201 National Government in the United States, 302 Comparative Foreign Governments, 350 International Relations, 355 American Foreign Policy, 460 Politics of Developing Nations, 465 Asian Politics.

Foreign Language

202 Intermediate Language, 200/300 Level Language Classes.

Sociology

201 Principles and Elements of Sociology, 304 Social Psychology, 312 Minority Groups, 345 Social Stratification
418 Social Control.

Management

201 Supervisory Techniques, 311 Organizational Behavior, 465 Industrial Traffic Management, 470 Personnel Management, 475 Industrial Management, 476 Systems and Operations Management, 478 Seminar in Personnel and Industrial Relations, 485 International Business Management.

Geography

203 Physical Geography, 205 Cultural Geography, 225 World Human Geography (Part I), 226 World Human Geography (Part II), 316 Geography of Latin America, 360 Geography of Europe and Russia.

English/Technical Writing

303 Technical Writing, 332 Advanced Grammar, 361 Scientific Method, 362 Graphics in Technical Writing, 363 Readings in Scientific and Technical Communication, 460 Advanced Technical Writing, 461 Technical Writing for Publication, 462 Technical Editing, 463 Scientific and Technical Presentations, 464 Occupational Technical Writing, 465 Specification, Bid, Grant, and Proposal Writing.

College of Administration and Business

Officers of Instruction

Dean
Gene H. Johnson
Associate Dean, Graduate Studies & Research
Marc C. Chopin
Associate Dean, Finance and Administration
Elizabeth A. Wibker
School of Professional Accountancy
Thomas J. Phillips, Jr., Director
Department of Computer Information Systems & Analysis
Thomas L. Means, Head
Department of Economics & Finance
Dwight C. Anderson, Head
Department of Management & Marketing
Mark J. Kroll, Head

Our Vision

We will be increasingly recognized for advancing the interests of our stakeholders through research, teaching, and service that leads to innovation in administration and business and prepares our students to think strategically and become effective leaders.

Our Mission

Our graduate programs drive our mission to engage in basic and applied scholarship that advances knowledge, improves management practice, and enhances business performance. This scholarship is both the foundation and stimulus of the College's commitment to excellence in teaching in our undergraduate and graduate programs.

Our undergraduate programs equip graduates to succeed in entry-level professional positions in the area of their academic major and/or to pursue entrepreneurial activities. Our master's programs address the continuing professional development needs of those preparing for mid-level general management positions, intrapreneurial/entrepreneurial leadership positions, and advanced specialist positions. Our DBA program equips graduates to become scholars in their disciplines and to think beyond traditional boundaries.

We aim to be exemplars to our students as we utilize our professional skills in service to our College and University, our professional societies, and our community. We recognize an obligation to advance the lifelong professional education needs of our alumni and the broader business community in our area and to contribute toward the economic development of Louisiana.

Accreditation

All degree programs offered by the College of Administration and Business, Louisiana Tech University, are accredited by AACSB - International (The Association to Advance Collegiate Schools of Business). Also, all programs offered by the School of Professional Accountancy are separately accredited by AACSB. The Research Division of the College of Administration and Business is accredited by the Association for University Business and Economic Research (AUBER).

Degrees and Curricula

Bachelor. The baccalaureate degree offered by the College is the Bachelor of Science degree. The four-year curricula leading to the degree of Bachelor of Science are the Accounting Curriculum, the Business Administration Curriculum, the Business Economics Curriculum, the Computer Information Systems Curriculum, the Finance Curriculum, the Management Curricula, and the Marketing Curriculum.

Master. The Master of Business Administration degree is offered. The curriculum emphasizes management decision-making that is applicable to all specialties in business administration, as well as to general management responsibilities. A number of specialties are available.

The Master of Professional Accountancy degree is offered.

Doctor. The Doctor of Business Administration (D.B.A.) degree is offered. See the University Graduate School section for additional information on graduate degrees.

History

Among the purposes listed in the original act creating the University was to give instruction in business subjects, and Tech's first graduate, Harry Howard, graduated in 1897 in business. In 1940, the School of Business Administration was created by the Louisiana State Board of Education. In 1970, Tech was designated as a University and the School became the College of Administration and Business.

Purpose

Consistent with Louisiana Tech's purpose, the College of Administration and Business recognizes as its primary role meeting the educational needs of its undergraduates and graduate students. Additionally, the College recognizes an expanding commitment to advance knowledge in business through theoretical and applied research and the objective of providing selected services to the public -- such as research information, consulting, participation in professional societies, and in-service educational opportunities. Most of the College's activities are pursued in a traditional environment of a predominantly full-time faculty and student body in a non-urban setting.

Essential Tasks

In order to respond to our mission, act in accordance to our values, and achieve our vision, the College must provide educational opportunities that enhance our students' continued development in:

- Understanding Leading-Edge Technology and Practice in a discipline, including skill in use of quantitative analysis, digital technology, and research tools that empower these advances.
- Utilizing Cognitive Skills, including critical and creative evaluation of problems and the capacity to exercise judgment that includes ethical considerations in the solutions offered, the ability to reach beyond traditional boundaries and to integrate insights from both general education and professional disciplines, and the capacity to think strategically and see opportunities that others miss.
- Recognizing the Major Internal and External Forces of Change that impact strategic thinking, including the technological, global, and demographic transformations that can be harnessed to achieve a sustainable competitive advantage.
- Enhancing the Capacity to Lead Change, including knowledge of effective organization renewal and re-engineering strategies; the ability to participate in, build, and lead teams that span disciplines; the capacity to formulate and communicate a vision of what could be that engenders enthusiastic support from an increasingly diverse workforce; and the humility to acknowledge and profit

from mistakes as well as accomplishments as part of a dedication to lifelong learning.

Research Division

The activities of the Research Division involve public service and contract research.

Center for Economic Education

The Center for Economic Education, is affiliated with the Louisiana Council and the National Council on Economic Education. The Center's primary purpose is to provide a program for increasing the level of economic understanding in its service area.

For additional information, contact Dr. Dwight Anderson, P.O. Box 10318, Ruston, LA 71272 or phone (318) 257-4140.

Small Business Development Center

Louisiana Tech's Small Business Development Center is one of fourteen in the state comprising a network of offices providing specialized management and technical assistance, counseling, and training to small business firms and prospective small business owners. The SBDC focuses on activities that provide in-depth, quality assistance to small businesses in areas that promote growth, expansion, innovation, increased productivity, and management improvement. The Small Business Development Center operates in partnership with the U. S. Small Business Administration and the Louisiana Department of Economic Development.

For additional information, contact the Director, Small Business Development Center, Louisiana Tech University, P. O. Box 10318, Ruston, Louisiana 71272 or phone (318) 257-3537.

Center for Real Estate Studies

The Louisiana Real Estate Commission's grant to develop the Real Estate program at Louisiana Tech constituted the Center's initial funding. The Center coordinates Real Estate research and promotes interaction with Real Estate professionals.

Scholarships

All incoming freshmen students become eligible for scholarships by applying for admission to the University and submitting the requisite scholarship applications available through the Division of Admissions, Basic, and Career Studies. In addition, the following are examples of scholarships available to students pursuing a degree in the CAB: William Roy and Maxine R. Adams, Jr. Scholarship; Century Telephone Enterprises, Inc./Clarke M. Williams, Jr. Memorial Scholarship; O.B. Clark Endowment for Business Scholarships; Eugene L. Gill Scholarship; Loraine N. Howard Endowed Scholarship; Lothar I. Iverson Memorial Scholarship; The William A. and Virginia Lomax Marbury Endowment for Business Scholarships; J. Murray Moore Scholarship; Edward L. Moyers Scholarship; W.R. "Reggie" Rives Scholarship; Lawson L. Swearingen–Commercial Union Assurance Companies Scholarship; The George Curtis and Esther Belle Taylor Endowment for Business Scholarships; Cynthia Ann Clark Thompson Memorial Scholarship; The Thomas A. and Lucinda Ritchie Walker Endowment Fund Scholarship; and Charles L. Wingfield–C.I.T. Financial Scholarship Fund.

Those administered by the CAB are awarded by faculty scholarship committees and information may be obtained by contacting the Office of the Dean, College of Administration and Business, P. O. Box 10318, Ruston, Louisiana, 71272.

Organizations

Accounting Society

The Accounting Society was organized in December, 1953, as a professional organization. The purpose of the society is to encourage higher standards of scholarship and develop a closer relationship among the accounting students, faculty, and business people.

Alpha Kappa Psi

Alpha Kappa Psi is a professional national business fraternity with the objectives of furthering the individual welfare of its members; fostering scientific research in the fields of commerce, accounts, and finance; educating the public to appreciate and demand higher ideals therein; and promoting academic programs in business.

Beta Alpha Psi Fraternity

Alpha Chi chapter of the national fraternity of Beta Alpha Psi was established in May, 1956. Beta Alpha Psi is a national professional and honorary fraternity, the purpose of which is to encourage and foster the idea of service as the basis of the accounting profession; to promote the study of accountancy and its highest ethical standards; to develop high moral, scholastic, and professional attainments in its members; and to encourage cordial relations among its members and the profession.

Beta Gamma Sigma

Beta Gamma Sigma is the national honorary scholastic society for students in all fields of business. It is the scholastic society recognized by the Accreditation Council of the American Assembly of Collegiate Schools of Business. A school or college of business administration must be a member of the Accreditation Council of the AACSB in order to have a chapter of Beta Gamma Sigma. Membership in the society is highly prized as a badge of merit recognized by leading business administrators everywhere.

Business Students Association

The official student body organization of the College is the Business Students Association. Dues are assessed each quarter, and the assessment is an official charge recognized by the College.

Association of Information Technology Professionals

The Association of Information Technology Professionals chartered on January 23, 1973, is a student organization affiliated with the National Association of Information Technology Professionals. The organization's purposes are to encourage the interest of its members in information systems and to facilitate the exchange of information between students and professionals in information technology in their efforts to develop better understanding.

Delta Pi Epsilon

Delta Pi Epsilon is a national honorary professional graduate fraternity in business education. Scholarship, cooperation, and leadership in business education are the primary functions of the fraternity.

Delta Sigma Pi

Beta Psi chapter of the professional international fraternity of Delta Sigma Pi was chartered on May 15, 1948. The purpose of the fraternity is to foster the study of business; to encourage scholarship and the association of students; to promote closer affiliation between the commercial world and students of business; to further a high standard of business ethics and

culture; and to promote the civic and commercial welfare of the community.

Financial Management Association

Membership in the Financial Management Association is open to any student interested in a career in Finance, including Real Estate, Insurance, Banking, Investments, and Financial Management. The Club is devoted to the professional development of its members and to fostering improved relationship among students, faculty, and professionals in the several areas of Finance.

Marketing Club

The Louisiana Tech Marketing Club is a collegiate chapter of the American Marketing Association, the international organization for professional marketers. The club is open to any student interested in marketing, and the goals are to have personal, scholarly, and professional development of its members and to promote friendly relations among students, faculty, and the business community.

Society for Human Resource Management

The Louisiana Tech Chapter of the American Society of Personnel Administration was chartered in 1977. The organization is a worldwide professional association of personnel and industrial relations practitioners, university faculty members, and students. The programs and activities of the organization are designed to provide a professional enrichment for the student's academic experience.

Advising Program

Each undergraduate student is assigned to a CAB faculty member who is the student's curricular advisor. This assignment is made early during the student's first term of enrollment in the University, and the advisor is designated based on the curriculum or concentration the student enrolls in at registration.

Assigned CAB faculty advise students which courses to take in future quarters during established early registration periods and are available during posted conference hours to advise the students on academic and career matters.

Undergraduate Preparation for Master of Business Administration

Undergraduate students desiring to pursue a Master of Business Administration degree should take Quantitative Analysis 390 or its equivalent. To confirm course equivalency, a student should check with the Associate Dean for Graduate Affairs and Academic Research, CAB 105.

There has been a substantial demand for MBA graduates who specialized in another field in their undergraduate programs. The demand by industry has been particularly heavy for MBA graduates with undergraduate programs in mathematics, science, and engineering, but the demand also exists for MBA graduates having social science and other liberal arts undergraduate majors. Undergraduate non-business students should consult the Associate Dean for Graduate Affairs and Academic Research for proper foundation courses prior to pursuing an MBA degree.

Undergraduate Admissions and Transfer Policies

Admissions Policies

Louisiana Tech's College of Administration and Business seeks to assist students in determining and achieving appropriate educational objectives. Part of the CAB's responsibility to present and potential students and to the general public is to admit to the CAB only those students who, by past educational preparation and demonstrated capability, are prepared to complete their intended curriculum at the CAB's required level of quality.

Students who have an overall, attempted average of 2.0 or higher and are not on probation may be admitted. The complete current statement of admissions requirements may be obtained upon request to the CAB Dean's office, which makes all admissions decisions and transfers students into the CAB at the beginning of each quarter in accordance with policies in effect at that time.

Transfer Policies

With some exceptions, the College of Administration and Business accepts for degree credit work such as that taken by examination and at other institutions in accordance with published policies of Louisiana Tech University as stated in the general information section of the University's Bulletin. The final determination of degree credit in any CAB curriculum, is, however, made by the CAB Dean's office. Transfer evaluations will reflect all grades earned at another institution, but only grades of "C" or above will be accepted for credit. A complete statement of current degree credit evaluation policies may be obtained upon request from the CAB Dean's office.

Scholastic Standards

Students in the CAB in good standing may carry a normal course load as defined by the University. When on probation, the student may schedule no more than nine semester hours.

Each time CAB students are suspended, their total academic status is subject to a review by the CAB Scholastic Standards Committee. In addition to acting on appeals for reinstatement from a suspension, the Committee may impose special conditions on suspended students. The Committee may also unenroll a student from the CAB when the requirements for admission are not being met by the student in the quality of work after admission. Additionally, a student is normally "Dropped from the CAB" when an indefinite suspension, or the equivalent, has been received.

CAB Graduation Requirements

To receive a degree from the CAB, a student must be admitted to and spend the senior year enrolled in the CAB. In addition, 50 percent of the required business courses must be taken at Tech. The number of semester hours defined in the senior year and other graduation requirements are the same as for the University.

Catalog Requirements and Changes

All official notices affecting CAB undergraduate students are posted on the bulletin board directly across the hall from the Dean's office (CAB 106) or are posted on the College's Web pages (www.cab.latech.edu). The notices placed thereon officially update the University Bulletins and are binding on students pursuing programs offered by the College as if published in the Bulletins.

All CAB students enter the College under all University and CAB policies then in effect. Each student is responsible for meeting all catalog requirements for graduation, including taking courses in the proper sequence as shown in each curriculum. Most 300- and 400-level CAB courses are open only to students with the proper foundation courses and academic background. For further information, contact the appropriate head/director of the academic unit that offers the courses.

When course requirements are changed in the curricula, they are to improve the education of students. Such changes are not

retroactive on work already taken by admitted students but will apply on work yet to be taken, except that the total remaining hours required for graduation cannot be increased and a student is not required to take an added course not available prior to graduation or for which the specified prerequisite course(s) will not have been required.

Each time a student changes curricula or concentrations, reevaluation of all work already taken is done in terms of that particular program's requirements. Because of the rapid advancement in knowledge, a student is permitted five years from the first admission date to complete a four-year curriculum, after which time a reevaluation of all work previously taken may be required.

Any deviations from curricular and other CAB requirements must be approved in writing in advance of the deviation (e.g., substitution of courses). Such changes must normally be recommended by the student's assigned advisor and approved by the student's academic head/director and the CAB undergraduate division director.

Electives System in CAB

Students are responsible for selecting courses that meet catalog requirements including electives. Certain electives are defined in the curricula. Any courses taken that are not specified in the student's program and are not specifically included in the electives requirements will be counted as non-degree courses. To be acceptable for degree credit any deviation in required or elective courses must be recommended in writing, in advance, by the student's advisor and have the written approval by the student's academic head/director and the CAB undergraduate division director. In general, course substitutions are discouraged, including electives, and must have a sound justification to be approved.

Internship

Each discipline in the College of Administration and Business has an internship course that students may apply as credit toward their academic degrees. To register for an internship course, a student should contact the department head/director for his/her major area prior to early advising to secure permission for enrolling in the internship course(s). The student will be advised as to applicable policies and requirements for receiving credit in the course.

Requirements for Business Minors

Any student pursuing an undergraduate major may earn a minor in one of the following fields. Students enrolled in the CAB may not pursue a business minor. This restriction is necessary to comply with AACSB accreditation regulations. All courses applied toward the minor must be completed with the grade of "C" or higher.

Minor in Accounting: Accounting 201, 202, 303, 304, 305, 307, 308, and 413; total 24 semester hours.

Minor in Computer Information Systems: Business Communication 435; Computer Information Systems 110, 310, 339; and 9 hours of 300- or 400- level courses in Computer Information Systems to complete 21 semester hours.

Minor in Economics: Economics 201, 202, 312; and 12 hours of Economics courses at the 300 and 400 level, to complete 21 semester hours.

Minor in Finance: Economics 215; Accounting 201, 202; Finance 318; and nine other hours of 300- or 400- level Finance courses to complete 21 semester hours.

Minor in Business Administration: Accounting 201, 202; Economics 215; Finance 318; Management 310; Marketing 300; and a 3-hour 300- or 400-level CAB elective to complete 21 semester hours.

Minor in Management, including Human Resources and Production/Operations Management: Management 310; and 18 hours from 300- and 400-level Management courses to complete 21 semester hours.

Minor in Marketing: Marketing 300; and 18 hours from 300- and 400-level Marketing courses to complete 21 semester hours.

Students in other colleges pursuing a minor or taking electives in the CAB are limited to a maximum of 27 hours of business courses. All courses applied toward the minor must be completed with the grade of "C" or higher.

Most 300- and 400-level CAB courses are open only to students with the proper foundation courses and academic background. For further information contact the appropriate head/director of the academic unit that offers the courses.

Second Baccalaureate Degree in Business

Students outside the College planning to pursue a second bacealaureate degree in the CAB should see the appropriate department head in the CAB to plan their course work and be advised as to the order in which business courses must be taken.

Bachelor Degree Programs

Eight baccalaureate degree curricula are offered by the College of Administration and Business: Accounting, Computer Information Systems, Business Administration, Business Economics, Finance, Management - Business Management & Entrepreneurship, Management - Human Resources Management, and Marketing. The course requirements for these four-year programs are given in the following pages.

Natural Sciences (GER) courses must be selected from the following: Physical Sciences - Chemistry 120, 121; Geology 111, 112, 200; Physics 205, 206, 220. Biological Sciences: Biological Sciences 101, 102.

Humanities (GER) courses must be selected from the following: History 101, 102, 201, 202, 360; English 201, 202; Speech 300; Philosophy 201, 305; any Foreign Language at the 200 level or above.

School of Professional Accountancy

Mission

Consistent with the missions of Louisiana Tech University and the College of Administration and Business (CAB), the School of Professional Accountancy (SPA) is committed to excellence in teaching, research, and service for the benefit of our scholarly, public, and private constituencies.

The SPA is dedicated to the intellectual growth of its students and to their preparation for successful careers and productive lives. To this end, the SPA offers academic degrees in accounting at the undergraduate, masters, and doctoral levels characterized by extensive, personal faculty-student interaction. The curricula are designed to provide students with a broad understanding of accounting and business administration.

Programs

The School of Professional Accountancy was established by the University of Louisiana Board of Regents in 1976. The undergraduate and master degree programs offered by the School are accredited by the Association to Advance Collegiate Schools of Business (AACSB International). The School is a charter member of the Federation of Schools of Accountancy and currently holds full membership in this organization.

The School of Professional Accountancy offers a four-year accounting program leading to the Bachelor of Science (B.S.) degree and a fully integrated five-year accounting program leading to the Master of Professional Accountancy (M.P.A.) degree. The School also offers an accounting concentration for

a Master of Business Administration (MBA) degree and a Doctor of Business Administration (DBA) degree.

The accounting profession affords individuals a large variety of opportunities in business. Graduates are found in numerous managerial positions since their accounting background offers them upward mobility in any business environment. Accounting also continues to be a field with one of the highest demands for graduates. To meet this demand, the curriculum provides a thorough education in the accounting discipline, together with a broad liberal arts and business background

Accounting Curriculum (B.S.)

Program Objectives

Broad Objectives

Provide students with the knowledge and tools needed to obtain meaningful employment and have successful careers.

Prepare students for graduate school.

Provide the educational background for students to meet the educational requirements of various professional accounting certification examinations.

Learning Objectives

Provide students with a general knowledge of accounting and business.

Enable students to improve their analytical skills.

Improve students' oral and written communication skills.

Expand student awareness of ethical issues.

Enhance students' technological skills.

Program Information

A minimum acceptable grade of "C" must be earned in all required 200 and 300 level accounting courses. Students may not enroll in higher level accounting courses until this minimum in previous courses has been met. Students enrolling in the accounting program will normally be allowed to schedule a maximum of two accounting courses simultaneously in a single quarter.

Transfer students electing this curriculum will be required to take at least fifteen semester hours (all at the 500 level for the MPA) in accounting courses numbered 300 and above (at least 6 hours at the 400 level) at Louisiana Tech. Any student currently enrolled in the accounting program may not take an accounting course at another institution without the approval of the director.

Pre-Professional Curriculum

Freshman Year
- Administration & Business 110 3
- Computer Literacy (GER)
  - Computer Information Systems 110 3
- English (GER) 6
- Humanities (GER)
  - History 3
- Mathematics (GER)
  - Mathematics 125, 222 6
- Natural Sciences (GER) 3
- Social Sciences (GER)
  - Psychology 102 or Sociology 201 3
- Elective (Non-CAB) 3

30

Sophomore Year
- Accounting 201, 202 6
- Business Law 255 3
- Social Science (GER)
  - Economics 201, 202 6
- Humanities (GER)
  - English 201 or 202 3
- Natural Sciences (GER) 6
- Social Sciences (GER)
  - Political Science 201 3
- Quantitative Analysis 233 3

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(GER): General Education Requirements (pg. 29)

Students and prospective students are reminded of their obligation to obtain program information and advice on meeting all program requirements from the director's office.

Advanced Professional Curriculum (B.S.)

Junior Year
- Accounting 303, 304, 305, 307 12
- Arts (GER) 3
- Business Communications 305 3
- Elective (Non-CAB) 3
- Humanities (GER)
  - Speech 377 or 110 3
- Management 310 3
- Marketing 300 3

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Senior Year
- Administration & Business 495 3
- Accounting 308, 413 6
- Accounting Elective (300 or 400 level) 3
- Computer Information Systems 310 3
- Economics 312 3
- Finance 318 3
- Humanities (GER) 3
- Directed Electives* 6

30

Total Semester Hours for B.S. Degree 120

(GER): General Education Requirements (pg. 29)

*Directed Electives chosen by student in consultation with faculty advisor. These electives are limited to three hours of accounting courses.

Fifth-year courses can be taken only after completion of the first four years and unconditional admission to the Graduate School has been attained. To be considered for admission to the graduate phase, students must meet established GPA requirements and submit an admission application with Graduate Management Admission Test (GMAT) scores.

Graduate Year
- Accounting 506 or 507, 508, 513, 521 12
- Accounting Electives* 9
- Directed Electives** 6
- Business Law 410 3

30

Total Semester Hours for M.P.A. Degree 150

*Accounting 505 may not be taken as an elective.

**Directed Electives chosen by student from 500-level, non-accounting CAB courses in consultation with faculty advisor.

Department of Computer Information Systems

Computer Information Systems Curriculum (B.S.)

The Computer Information Systems Curriculum prepares students for careers working with information technology by stressing the application and use of information technology in the business environment. The CIS Curriculum provides learning experiences in systems analysis, design, and implementation; project management; e-commerce; telecommunications; networking; databases; programming; and

interpersonal communication. As the increase in the use of technology in business continues, growth is predicted in the demand for people with these skills.

Program Objectives

1. To provide students with a broad-based, entry-level understanding of CIS and its possible career areas.
2. To teach CIS principles conceptually so that they can be understood and applied regardless of the specific software package being used.
3. To help CIS students develop problem-solving skills, including strategic and innovative applications of information technology.
4. To accentuate the necessary skills for successful interfacing with users of computer systems.

Program Information

A minimum acceptable grade of "C" must be earned in all required Computer Information Systems courses, in Quantitative Analysis 233, and in Business Communication 435. Students have two attempts in each course to earn a "C" or higher. After two attempts in one of these courses, if a student fails to earn a "C" or higher, he or she will no longer be allowed to pursue a degree in Computer Information Systems. Withdrawing from a class and receiving a "W" counts as an attempt.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
  Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
  History 3
Mathematics (GER)
  Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
  Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3
30

Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Science (GER)
  Economics 201, 202 6
Computer Information Systems 339 3
Natural Sciences (GER) 6
Social Science (GER)
  Political Science 201 3
Quantitative Analysis 233 3
30

Junior Year
Arts (GER) 3
Business Communication 305 3
Humanities (GER)
  English 201 or 202 3
  Additional Humanities Course 3
Economics 312 3
Computer Information Systems 310 3
Finance 318 3
Management 310, 333 6
Marketing 300 3
30

Senior Year
Administration & Business 495 3
Business Communication 435 3
Computer Information Systems 323, 335, 444, 450 12
Directed Electives* (CAB 300-or 400-level course) 6
Elective (Non-CAB) 3
Humanities (GER)
  Speech 377 or 110 3
30

Total Semester Hours 120

(GER): General Education Requirement (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Department of Economics & Finance

Business Administration Curriculum (B.S.)

Rapid changes in the business world have made it essential that future business administrators be broadly educated in order to adjust and adapt themselves to changing practices. Therefore, this curriculum is tailored to allow a student to receive instruction in a variety of functional areas of business. This program is appropriate for non-technical, entry-level positions and is an excellent background for students planning certain advanced degrees in business and law.

Program Objectives

1. To provide students with an opportunity to obtain a broad exposure to the field of business.
2. To allow students to tailor their curriculum to match their career interests.
3. To provide a business base on which to build a professional career or to prepare for government service.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
  Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
  History 3
Mathematics (GER)
  Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
  Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3
30

Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
  Economics 201, 202 6
  Political Science 201 3
Humanities (GER)
  English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3
30

Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Economics 312 3
Finance 318 3
Management 310, 333 6
Marketing 300 3
Humanities (GER)
  Speech 377 or 110 3
  Additional Humanities Course 3
30

Senior Year
Administration & Business 495 3
Elective (Non-CAB) 3
Directed Electives* (300- or 400-level) 9
Accounting or CIS Elective (300- or 400-level) 3
Economics Elective (300- or 400-level) 3
Finance Elective (300- or 400-level) 3
Management Elective (300- or 400-level) 3
Marketing Elective (300- or 400-level) 3

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Total Semester Hours 120

(GER) General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Business Economics Curriculum (B.S.)

Economics majors are employed in all sectors of the economy, government, industry and finance, and non-profit organizations. In addition, undergraduate training in economics is an ideal major for those contemplating continuing their formal education in public administration, general business administration, or law.

The use of economists in all areas of the economy has expanded rapidly in the past and is expected to continue in the future. Business economists perform a wide variety of tasks for governmental agencies and private organizations, such as statistical and general research, pricing and marketing, financial analysis, economic regulation, and forecasting business conditions.

To function effectively, the business economist must have both knowledge of theory and an understanding of economic and business facts and institutions. Although not all economists specialize in statistical or mathematical analysis, an adequate knowledge of mathematics is usually required. Students can also broaden their training by combining their economics major with other areas of their interest.

Program Objectives

1. To provide students with knowledge of price, production, and distribution theories and practices.
2. To foster students' understanding of the dynamics of the supply and demand for money and the role of the central bank in the money supply process.
3. To develop students' understanding of the origins and operations of human capital allocation.
4. To promote students' ability to analyze monetary and fiscal policies and their impact on business and society.

Freshman Year
Administration & Business 110 3
Computer Literacy
  Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
  History 3
Mathematics (GER)
  Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
  Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3

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Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
  Economics 201, 202 6
  Political Science 201 3
Humanities (GER)
  English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3

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Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Economics 312 3
Finance 318 3
Humanities (GER)
  Speech 377 or 110 3
  Additional Humanities Course 3
Management 310, 333 6
Marketing 300 3

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Senior Year
Administration & Business 495 3
Accounting or Finance Elective 3
Directed Electives* (300- or 400-level) 6
Elective (Non-CAB) 3
Economics 408, 437 6
Economics Electives (300- or 400-level) 9

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Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Finance Curriculum (B.S.)

The Finance curriculum provides students with the background to enter a variety of financial fields. The Finance curriculum is designed for students who have an interest in financial management (including financial position analysis, working capital management, funds acquisition and capital investment analysis), commercial banking, securities analysis, insurance, and real estate. The curriculum combines a liberal arts foundation and an in-depth coverage of business subjects as well as specialized knowledge in a variety of financial topics.

Transfer students electing the Finance curriculum will be required to take at least twelve (12) semester hours in finance courses at Louisiana Tech. Any student currently enrolled in the Finance curriculum may not take a finance course at another institution without the prior approval of the department head. In addition, finance majors are encouraged to take three hours (one course) of their Directed Electives in accounting or economics.

Program Objectives

1. To provide students with knowledge of the fundamentals of financial management, securities analysis, capital markets, and financial institutions.
2. To develop students' abilities to access and utilize databases through the use of current technology.
3. To develop students' understanding of global capital flows.
4. To develop students' decision-making skills within a market valuation context.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
  Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
  History 3
Mathematics (GER)
  Mathematics 101, 125 6
Natural Sciences (GER) 3

Social Sciences (GER)
Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3

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Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
Economics 201, 202 6
Political Science 201 3
Humanities (GER)
English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3

30

Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Economics 312 3
Finance 318, 319 6
Humanities (GER) 3
Management 310 3
Management 333 or Accounting 308 3
Marketing 300 3

30

Senior Year
Administration & Business 495 3
Elective (Non-CAB) 3
Directed Electives* (300- or 400-level) 6
Finance 414, 425 6
Finance Electives 9
Humanities (GER)
Speech 377 or 110 3

30

Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Department of Management and Marketing

Managers are found at every level and in every kind of private and public organization. Managers all have in common the responsibility of helping their organizations meet their objectives.

A career in management is ideal for those who possess good leadership qualities and have the ability to work well with other people. Individuals interested in management should be creative, outgoing, and have the ability to guide and motivate people toward common goals.

Program Information

A minimum acceptable grade of "C" must be earned in all required courses. Students have two attempts in each course to earn a "C" or higher. After two attempts in one of these required courses, if a student fails to earn a "C" or higher, he or she will no longer be allowed to pursue a degree in Business Management & Entrepreneurship, Human Resources Management, or Marketing. Withdrawing from a class and receiving a "W" counts as an attempt.

Management - Business Management & Entrepreneurship Curriculum (B.S.)

Designed for the student who desires training in general business management, the business management curriculum concentrates on management courses such as personnel, sales, small businesses, and industrial management. Other courses include the legal aspects of government and business, marketing research, and managerial economics.

Students electing this curriculum often seek management trainee positions with established firms or governmental bodies. Other students use their training in this curriculum to become an entrepreneur and start a business of their own.

Program Objectives

1. To develop the conceptual and analytical skills necessary to assess current organizational and environmental realities and to anticipate future challenges and opportunities in order to accomplish organizational objectives.
2. To provide the necessary tools to manage the processes of an existing enterprise or to design the processes and structures needed for a new enterprise.
3. To develop the communication skills and human relations skills of the student and to enhance the ability to work in a culturally diverse environment and to manage contemporary organizations effectively.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
History 3
Mathematics (GER)
Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3

30

Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
Economics 201, 202 6
Political Science 201 3
Humanities (GER)
English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3

30

Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Elective (Non-CAB) 3
Economics 312 3
Finance 318 3
Management 310, 333 6
Marketing 300 3
Humanities (GER)
Additional Humanities Course 3

30

Senior Year
Administration & Business 495 3
Management 340, 400, 470, 475 12
Management 476 or 485, or Marketing 482, or
Quantitative Analysis 430 3
Directed Electives* (300- or 400-level) 9

Humanities Elective (GER)
Speech 377 or 110 3

30

Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Management - Human Resources Management Curriculum (B.S.)

The Human Resources Management curriculum is often referred to as personnel management or industrial relations. Job opportunities for personnel specialists exist throughout the country in both the private and public sectors.

Program Objectives

1. To develop an understanding of the role of strategic hum,an resource planning in achieving competitive advantage in a challenging and increasingly global environment.
2. To enhance the development of conceptual skills, analytical abilities, and oral and written communication skills to facilitate problem-solving and decision-making in human resource management.
3. To prepare students for careers in the field by emphasizing the functional areas of human resource management, including planning, recruitment, selection, compensation, performance appraisal, training and development, personnel law, ethics, labor relations, and managing diversity.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
History 3
Mathematics (GER)
Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3

30

Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
Economics 201, 202 6
Political Science 201 3
Humanities (GER)
English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3

30

Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Elective (Non-CAB) 3
Economics 312 3
Finance 318 3
Management 310, 333 6
Marketing 300 3
Humanities (GER)
Additional Humanities Course 3

30

Senior Year
Administration & Business 495 3
Management 447, 470, 472, 478 12
Management Elective (300- or 400-level) 3
Directed Electives* (300- or 400-level) 9
Humanities (GER)
Speech 377 or 110 3

30

Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Marketing Curriculum (B.S.)

In the past several decades, marketing has become the focal point of many business operations.The marketing curriculum is designed to help prepare individuals for a wide range of possible positions in this exciting field. These positions include retailing, advertising, sales and sales management, wholesaling, product development, public relations, and marketing research.

Program Objectives

1. To provide an understanding of the domestic and global aspects of product management, pricing, distribution, and promotion of goods, services, and ideas that satisfy both consumer and organizational buyers.
2. To gain an understanding of the marketing process and its interaction with the legal, political, economic, social, cultural, technological, competitive, and ethical environments. This understanding of the marketing process includes competitive analysis and strategic planning and how these functions aid the overall organization.
3. To develop effective critical thinking skills, written and oral communication skills, and quantitative analysis skills necessary to succeed in such fields as professional selling, marketing research, advertising and promotion, distribution management, product development and management, and overall marketing management.

Freshman Year
Administration & Business 110 3
Computer Literacy (GER)
Computer Information Systems 110 3
English (GER) 6
Humanities (GER)
History 3
Mathematics (GER)
Mathematics 101, 125 6
Natural Sciences (GER) 3
Social Sciences (GER)
Psychology 102 or Sociology 201 3
Elective (Non-CAB) 3

30

Sophomore Year
Accounting 201, 202 6
Business Law 255 3
Social Sciences (GER)
Economics 201, 202 6
Political Science 201 3
Humanities (GER)
English 201 or 202 3
Natural Sciences (GER) 6
Quantitative Analysis 233 3

30

Junior Year
Arts (GER) 3
Business Communication 305 3
Computer Information Systems 310 3
Elective (Non-CAB) 3
Economics 312 3

Finance 318 3
Management 310, 333 6
Marketing 300 3
Humanities (GER)
Additional Humanities Course 3

30

Senior Year
Administration & Business 495 3
Marketing 320, 473, 482 9
Choose any three (3) courses from the following:
Marketing 307, 401, 420, 425, 435, 485 9
Directed Electives* (300- or 400-level) 6
Humanities (GER)
Speech 337 or 110 3

30

Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor.

Graduate Programs

Master of Business Administration

The Master of Business Administration (MBA) degree is offered by the College of Administration and Business. Employment and doctoral-level studies opportunities are excellent for MBA graduates. Students may enter the program from baccalaureate programs either in business or non-business fields. For admissions, curriculum, and other information, consult the Graduate School section of the Bulletin.

Master of Professional Accountancy

The Master of Professional Accountancy (MPA) is offered by the College of Administration and Business. For admissions, curriculum, and other information, see the earlier listing under the Professional Accounting Program and consult the Graduate School section of the Bulletin.

Doctoral Program

The Doctor of Business Administration (DBA) degree is offered by the College of Administration and Business. The requirements of the program are given in the Graduate School section of the Bulletin.

College of Applied and Natural Sciences

Officers of Instruction

Dean
Shirley P. Reagan
Assoc. Dean, Graduate Studies & Research
William J. Campbell
Assoc. Dean, Undergraduate Studies
James D. Liberatos
Department of Agricultural Sciences
Gary A. Kennedy, Head
School of Biological Sciences
David K. Mills, Director
School of Forestry
Mark D. Gibson, Interim Director
Department of Health Information Management
Angela Kennedy, Head
School of Human Ecology
Janet F. Pope, Director
Division of Nursing
Pamela V. Moore, Interim Director

Address

More information about the College of Applied and Natural Sciences can be obtained by writing and/or visiting the College's web site:

College of Applied and Natural Sciences
P. O. Box 10197
Louisiana Tech University
Ruston, LA 71272
(318) 257-4287
http://www.ans.latech.edu

Mission

Through excellence in teaching, research, and service, the College of Applied and Natural Sciences prepares students for careers in agriculture, biological sciences, forestry, health care, and human ecology. Graduates are expected to be committed to life-long learning, to environmental awareness, and to improving their profession and community.

Organization and Curricula

The College of Applied and Natural Sciences was formed in 1996 by the merger of the Colleges of Human Ecology and Life Sciences, colleges with programs that have been a part of Louisiana Tech University since 1896. The college is based on the strong traditions of its parent colleges.

The college is organized into the Division of Nursing, the School of Forestry, the School of Human Ecology, the School of Biological Sciences and the following departments: Agricultural Sciences and Health Information Management.

The following curricula are offered.

Associate of Science
Health Information Technology
Nursing (two-year RN program)

Bachelor of Arts
Merchandising and Consumer Affairs

Bachelor of Science
Agribusiness
Animal Science
Biology
Environmental Science
Family, Infancy, and Early Childhood Education
Health Information Administration
Medical Technology
Nutrition and Dietetics
Plant Science
Wildlife Conservation

Bachelor of Science in Forestry

Master of Science
Biology
Family and Consumer Sciences
Nutrition and Dietetics

These curricula provide well-balanced educational programs based on the professional needs of students. They include instruction in the natural sciences, the humanities, and the social sciences as well as a comprehensive education in one of the specialized fields of the college.

Minors Available

The following areas of study are available for a minor:

Animal Science
Biology
Consumer Affairs
Environmental Science
Family and Child Studies
Forestry
Geographic Information Science
Gerontology (interdisciplinary)
Human Nutrition
Medical Technology
Merchandising
Plant Science
Wildlife Conservation

Specific requirements for each of these minors are identified in the departmental and school sections of the bulletin.

Admission

Students who meet the University admission criteria will be admitted to the College of Applied and Natural Sciences. Specific admissions criteria have been established for some programs. These criteria are identified in the descriptions of those programs.

Transfer Students

Candidates for admission to the College of Applied and Natural Sciences who have completed course work at another institution must submit an official record of that credit to Louisiana Tech University. This record will be evaluated by the department conducting the program in which the candidate wishes to major. The evaluation will determine which curricular requirements of the program of study at Louisiana Tech have been satisfied by the student's prior course work. General education requirements are evaluated by the College of Applied and Natural Sciences. A grade of "C" or better is considered acceptable for transfer of credit for required or equivalent courses in the College of Applied and Natural Sciences degree programs.

Advising

Each student in the College of Applied and Natural Sciences is assigned an academic advisor. This advisor assists students in planning, implementing, and completing their programs of study as well as in career planning. Assignments are made to assure that students have advisors who have specialized knowledge in their fields of study. Students have the opportunity to change their major and/or advisor, and such changes can be initiated with the appropriate academic unit head.

Experiential/Cooperative Education

Students majoring in agribusiness; animal science; environmental science; family, infancy, and early childhood education; forestry; biology; plant science; merchandising and consumer affairs; and wildlife conservation may elect to participate in a cooperative education/internship experience one or more terms during their college careers. These students receive relevant work experiences while earning college credit. Some students are paid for their services.

These experiences are designed to develop professional competencies, to impart general and specific skills, to provide opportunities for application of theoretical concepts, and to assist students in the transition from college to employment. The work experience also may provide students an entree for their first job following graduation.

Experiential learning experiences occur beyond the North Louisiana area. Cooperative education and practica work experiences occur in a variety of locations both within and outside Louisiana. Nursing, Health Information Management, and Dietetic students receive clinical instruction in varied health care facilities throughout North and Central Louisiana. Medical Technology students complete clinical experiences in hospitals during their senior year. The Early Childhood Education Center serves as an early childhood demonstration laboratory for participation with young children. Students may travel to New York and Dallas as part of Merchandising and Consumer Affairs travel study. Agricultural Sciences students have the opportunity to complete cooperative education experiences in agricultural industries and with agribusiness firms located throughout the United States.

All programs require application and acceptance.

Scholarships

Scholarships are available in the College of Applied and Natural Sciences. Any student enrolled in the college is eligible to apply for general scholarships. However, a number of scholarships are available only to students in a certain department or major.

The M. Hayne Folk, Jr., Memorial Scholarship of $150 is awarded to a sophomore within the College of Applied and Natural Sciences having high academic achievement and financial need.

Health Science Scholarships are available to students majoring in the allied health professions of medical technology, health information management, speech pathology, nursing, pre-medicine, dietetics and other pre-professional programs in the health sciences. Recipients are students who have demonstrated academic excellence at Louisiana Tech University in an allied health major.

The Ruston Hospital Endowment is available to Health Science students from Lincoln Parish.

The Lettie Pate Whitehead Scholarship is open to undergraduate women students who meet the following criteria: financial need, Christian, and registered in Health Information Management (2- or 4-year curriculum), Nursing, Medical Technology, or Speech Pathology. The amount of the scholarship is based on need.

AGRICULTURAL SCIENCES

The Benjamin Forbes Leadership Scholarship is awarded to an animal science student who shows leadership potential and is specializing in dairy production.

The Block and Bridle Brittain Simms Memorial Scholarship is awarded to a Block and Bridle student for outstanding leadership, service, and club activity.

The Block and Bridle Richard Hill Memorial Scholarship is awarded to an outstanding first year Block and Bridle student.

The Block and Bridle Sullivan Memorial Scholarship is awarded to a Block and Bridle student for outstanding scholastic achievement and club activity.

The Don Hinton Dairy Scholarship is awarded to an animal science student specializing in dairy production.

The C. G. Hobgood Memorial Scholarship is awarded to an advanced student in Plant Science.

The T. W. Ray Johnson Memorial Scholarships are available to students in Agricultural Education and Animal Science.

The John A. Wright Horticulture Scholarship is awarded to a student majoring in Plant Science.

The Todd McAfee Memorial Scholarship is awarded to a senior in Agribusiness or an Alpha Zeta officer.

The Agricultural Endowment Scholarships are available to entering freshmen and continuing students in all fields of agriculture.

The Bessie Mae Talbert Purdy Scholarships are available to students in Agricultural Education.

The Northeast Flower Society Horticulture Scholarship is awarded annually to a student majoring in Plant Science – Horticulture.

The James Furman & Lavara B. Love Endowed Scholarship is awarded annually to a full-time student majoring in Plant Science with a minimum 3.25 GPA and employed on a part-time basis.

The John Green Scholarship is awarded to animal science students concentrating in dairy production.

BIOLOGICAL SCIENCES

Premedical/Predental Fund awards one or more entering students $300 to $600 for the freshman year. A student must have medicine or dentistry as a career goal and maintain at least a 3.0 GPA.

Outstanding Freshman Biological Science Student awards of $100 to $300 are given to one or more outstanding biology majors at the end of their freshman year (completion of 30 semester hours).

Scott M. Weathersby Endowment Award is presented to the Outstanding Graduating Senior Biology Student.

FORESTRY

Application deadline is February 1. Write School of Forestry, Box 10138, T. S., Ruston, LA 71272 for applications, or complete on-line application on college web site.

The Louisiana Tech Forestry Alumni Association award of $1000 is given to one or more forestry students.

School of Forestry Freshman Awards of up to $1500 are provided to beginning freshman.

Richard M. Sisk Trust Fund Award of $1000 is provided to one or more beginning freshmen.

The Louisiana Forestry Foundation awards $1000 scholarships to selected forestry students.

Seedling and Sapling Club of the Louisiana Forestry Association awards a $200 scholarship to an outstanding forestry junior or senior.

Willamette Industries awards an $825 scholarship to a selected forestry student.

The Walter Kellogg Forestry Scholarship of $1000 is awarded annually to a selected forestry student.

The Lloyd P. Blackwell Scholarship of $1000 per year is awarded to one or more forestry students.

The Dan and Dave Metz Scholarship is an annual award of $600 to one or more forestry students.

W. L. Browder Scholarship, an annual award of $600, is given to one or more forestry students.

Clyde and Ruby Anthony Scholarship is an award of $1,000 to non-freshman forestry majors.

Wirt L. and Althea E. Bond Forestry Scholarship awards up to $2,000 to forestry students.

Andrulot Scholarship, an award of $500, is given to one or more forestry field session students.

E. W. Merritt Scholarship, an annual award of $1000, is given to one or more forestry students.

HEALTH INFORMATION MANAGEMENT

The Eddie Cooksey Scholarship of $500 is awarded to one Health Information Administration student and one Health Information Technology student. The criteria to apply are full-time student in Louisiana, with one year of study remaining; demonstrated financial need; and overall GPA of 3.0.

HUMAN ECOLOGY

Human Ecology Alumni Freshman Scholarships vary in amount and are awarded annually based on ACT scores, high school academic records, extracurricular activities, and references.

The Mary Wilks Chandler Scholarship, an award for an incoming freshman, was established by Dr. Virgil Orr and Mrs. Myrtis Orr in honor of her mother. Preference is given to a student majoring in Family, Infancy, and Early Childhood Education.

The Clyde and Mildred Mobley and Kola Mobley Fouche Memorial Scholarship was established for freshman students by Mr. and Mrs. Laurie Mobley in honor of his sisters.

F. C. and Gladys M. Haley Scholarship was established by Mr. F. C. Haley, a 1931 graduate of Louisiana Tech and prominent educator, and his wife. The award is designated for a first-year human ecology student.

The Clothielde Tuten Clark Scholarship was established by Mrs. Clark, a 1935 graduate of Home Economics and former Cooperative Extension agent, for an incoming freshman student.

Human Ecology Faculty Scholarships vary in amount and are awarded to upper division or graduate students based on professional promise.

Human Ecology Organization Scholarships are awarded as funds are available by the Louisiana Tech student chapters of the Louisiana Early Childhood Association, Kappa Omicron Nu, and the Louisiana Association of Family and Consumer Sciences (LAFCS) to outstanding members.

The Rhoda L. Chambless Scholarship was established by Mrs. Chambless' family. The scholarship is awarded to a junior human ecology major.

The Willie Lou Durrett Scholarship was established by Dr. Mary Ellen Durrett, former head of home economics at the University of Texas-Austin, to honor her mother. The scholarship is awarded to a senior student with interest in extension or child development.

The Laurie S. and Helen Mobley Scholarship is awarded to a junior human ecology major.

The Lois M. Jackson Dietetics Advisory Board Scholarship is awarded to a senior in nutrition and dietetics. The award is based on academic achievement, professional promise, and financial need.

The Whetstone Scholarship is provided by Mr. and Mrs. Terral Whetstone, alumni of Louisiana Tech, to a sophomore human ecology student.

The Eastman/Auto-Chlor Scholarship is provided by Auto-Chlor Systems, a business in chemical sanitation, for a junior nutrition and dietetics major.

The Bette Heard Wallace Endowed Scholarship was established to honor Mrs. Wallace upon her retirement from the College of Human Ecology. Recipients must be at least a junior and have an established record of leadership and scholarship.

The Henry E. and Margaret A. Stamm Endowed Scholarship was established by John R. and Mary Margaret Stamm Clay to honor her parents. The scholarship is awarded annually to a sophomore human ecology major that demonstrates academic excellence.

The Merle Burke Endowed Scholarship was established by Miss Burke, a former faculty member, to honor an upper class human ecology student with outstanding professional promise.

The Morrison's Health Care Scholarship was established by Morrison Health Care, Inc. It is given to a junior dietetics major.

The Willie Fletcher Scholarship, which is awarded to a graduate student in a Family and Child Studies-related program, was established by Mr. and Mrs. Lucius McGehee to honor Miss Willie Fletcher, the first Director and teacher at the Louisiana Tech University Early Childhood Education Center.

The Jeanne Mack Gilley Endowed Scholarship. This scholarship was established by Human Ecology alumni and faculty to honor Dean Gilley upon her retirement from the College of Human Ecology. It is awarded to a graduate student in a human ecology degree program.

The E. Lee and Armede Wilks Young Endowed Scholarship was established by Mrs. Young, an alumnus of human ecology and her husband, to recognize outstanding achievement in an undergraduate student.

The Rev. and Mrs. W. R. Gage Endowed Scholarship is awarded to a senior human ecology major who exhibits outstanding promise.

The Dr. Harvye Lewis Endowed Scholarship, established by Dr. Lewis, recognizes academic excellence and professional potential in graduate students.

NURSING

The Mary Jarrell Nursing Scholarship is awarded to students majoring in A. D. nursing.

The Mary Marguerite Merritt Scholarship is awarded to students who are currently enrolled or have been accepted into the associate degree program in nursing. The selection criteria are GPA of 2.8 or greater; financial need; leadership and activities, organizations; awards; scholarships and other financial aid; and future career plans.

The Henry R. Mays, Jr. Scholarship is awarded to students who have completed a minimum of three (3) quarters of the nursing curriculum at Louisiana Tech University. The selection criteria include 2.5 or greater GPA; a caring manner; and letters of reference.

Facilities

Academic programs in the College of Applied and Natural Sciences are located in Carson Taylor Hall and George T. Madison Hall on the main campus as well as Reese Hall and Lomax Hall on the South Campus. In addition, numerous laboratory facilities in other buildings and at other sites enhance the instruction of students. Biological sciences and human ecology are located in Carson Taylor Hall. In addition, biological sciences has facilities in George T. Madison Hall. Nursing and health information management are located in George T. Madison Hall.

The Center for Children and Families, the only such center in Louisiana approved by the Board of Regents, is operated by the School of Human Ecology. The center encourages collaborative research, instruction, and service that promote the well-being of children and families. The Family and Child Studies Institute, one component of the center, sponsors the endowed Bruce Everist Lecture Series. Another component, the Early Childhood Education Center, is a learning laboratory for three- and four-year-old children. Early childhood education students observe, student teach, and conduct research at the center.

Agricultural sciences and forestry programs are located on the South Campus. Reese Hall, Lomax Hall and the Forestry Laboratory Building provide classrooms, laboratories and office space. In addition, Lomax Hall houses research and student laboratories, greenhouses, and a display greenhouse for large plant specimens and exotic plantings. The 850 acre South Campus also has a Jersey-Holstein herd and dairy facility which provides milk for the campus; a dairy processing plant which pasteurizes and packages milk, makes cheeses and butter, and produces ice cream; a meats laboratory which trains students in meat processing and marketing; and an equine center. The Louisiana Tech University Farm Salesroom, also located on South Campus, offers products that are produced and/or processed by the Department of Agricultural Sciences. Fluid milk, cheese, ice cream, yogurt, butter, and sour cream are available on a continuing basis. Specialty products include peach ice cream, Christmas eggnog, and gift-boxed, wax-dipped cheddar cheese. The Tech Meats Laboratory sells retail cuts of beef, chicken, and pork through the Salesroom. Other products include seasonal fruits and vegetables, ornamental plants, Christmas poinsettias, and bedding plants. The Salesroom provides an integrated link in the marketing and sales of food and ornamental plant products.

The Louisiana Tech Equine Center provides facilities and animals for student instruction in all phases of horsemanship such as breeding, training, and nutrition. The center also provides recreational horseback riding sessions and is developing a therapeutic and handicapped horseback riding program.

Also located on the South Campus are numerous other facilities which support the agriculture and forestry programs: a sawmill, a dry kiln, wood utilization laboratories, a wood working shop, a weather station, a farm machinery shop, barns for livestock, fields, forests, nurseries, research vegetable and flower gardens, a 50-acre arboretum, and ponds.

University-owned forestlands (800 acres) in North Louisiana and West Mississippi are used in the forestry education and research programs.

Student Organizations

A number of organizations provide students opportunities for professional and leadership development, service, and networking with other students, faculty, and professionals. Students who desire more information about these organizations may consult either their advisor or their academic unit head. College organizations include the following:

Agricultural Sciences

Alpha Zeta
Block and Bridle
Future Farmers of America
Horticulture Club
Pre-Vet Club

Biological Sciences

Alpha Epsilon Delta
Chi Lambda Beta

Environmental Science

National Association of Environmental Professionals

Forestry

Alpha Zeta
Forestry Club
Forest Products Society
Xi Sigma Pi
Student Chapter, Society of American Foresters
Student Chapter, The Wildlife Society

Health Information Management

Sigma Rho Alpha

Human Ecology

Organization of Human Ecology Students
Louisiana Tech Student Association of Family and Consumer Sciences
Louisiana Tech Student Dietetic Association
Louisiana Tech Student Early Childhood Association (LAECA)
Merchandising and Consumer Club
Kappa Omicron Nu (National Honorary)
Child Life Organization

Nursing

Student Nurses Association

Department of Agricultural Sciences

The Department of Agricultural Sciences offers Bachelor of Science degrees in agribusiness, animal science, and plant science. A concentration in agricultural education can be earned while fulfilling the requirements for teacher certification in secondary education in the College of Education.

The animal science curriculum has six areas of concentration: dairy production, dairy processing, equine, livestock production, general animal science, and pre-veterinary medicine. The plant science curriculum consists of two concentrations: agronomy and horticulture.

Louisiana Core Curriculum for Agriculture Programs

Following is a two-year core curriculum for agricultural programs throughout the State of Louisiana. All state universities have agreed to accept these courses toward any agricultural degree program upon transfer from one university to another.

Core Agriculture

English (GER)	6
Mathematics (GER)	
Mathematics 101, 111 or 112	6
Computer Literacy (GER)	
Agricultural Science 201 or Computer Information Systems 101	3
Natural Sciences (GER)	
Biological Sciences 130, 131, 132, 133	8
Chemistry 100, 101, 102, 103, 104	8
Arts (GER)	
Art 290, Music 290, or Speech 290	3
Humanities (GER)	
English 201 or 202, 303	6
History 201 or 202	3
Speech 377	3
Social Sciences (GER)	
Economics 215	3
Psychology, Sociology, or Geography	3
Animal Science 111	4
Plant Science 101, 200, 202	7
	63

Agricultural Business

The agricultural business program at Louisiana Tech provides a base of knowledge and training which supports area, state, national, and international career opportunities in the production, processing, distribution, and marketing of food, fiber, and oil-based products. The agricultural business program is designed such that students will have maximum flexibility in fulfilling individuals' needs while enhancing employability. The curriculum includes a built-in minor in Business Administration from the College of Administration and Business. Advisor/student selection of appropriate electives will allow specialization in the area of interest.

Agricultural Business Curriculum (B.S.)

Freshman year	
Animal Science 111	3
Natural Sciences (GER)	
Biological Sciences 130, 131	4
English (GER)	6
Humanities (GER)	
History Elective	3
Mathematics (GER)	
Mathematics 101 or 111, 112	6
Plant Science 101	3
Social Sciences (GER)	6
	31
Sophomore Year	
Accounting 201, 202	6
Agricultural Business 220	3
Directed Elective*	3
Natural Sciences (GER)	
Chemistry 100, 101, 102, 103, 104	8
Social Sciences (GER)	
Economics 215	3
Humanities (GER)	
English 201 or 202	3
Computer Literacy (GER)	3
Arts (GER)	3
	32
Junior Year	
Agricultural Business 310	3
Agricultural Science 320	3
Humanities (GER)	
English 303	3
Speech 110 or 377	3
Directed Elective*	3
Business Elective (300 or 400 level)	3
Finance 318	3
Management 310	3
Marketing 300	3
Plant Science 310	3
	30
Senior Year	
Agricultural Business 402, 411, 430, 450, 460	13
Directed Electives*	12
Environmental Science 300	3
Elective	3
	31
Total Semester Hours	124

(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with advisor.

Agricultural Education

The concentration in agricultural education prepares the student for teaching vocational agriculture in secondary schools. The College of Education manages this program in conjunction with the Department of Agricultural Sciences, with student advising within this department. Students in agricultural education must meet the general requirements for admission to teacher education in the College of Education's upper division. The program in agricultural education, leading to a Bachelor of Science degree in Secondary Education, requires 127 semester hours, nine of which are earned in selected high schools in the area of apprentice teachers. Service courses in technical agriculture provide the student training in the areas of plant science, animal science, forestry, soils, farm management, and farm mechanics. An active collegiate chapter of Future Farmers of America provides practical experience in this important leadership activity.

The program is listed under the College of Education - Curriculum, Instruction, and Leadership. Inquiries about this

curriculum may be made to either this department or to the College of Education.

Animal Science

Animal science includes the fields of poultry, swine, dairy, beef, equine, and veterinary science.

Animal science provides instruction and practical experience in judging, breeding, feeding, and managing livestock. Through course selection the student may prepare for livestock farming, management, business, or graduate study in animal science or veterinary medicine. Selection of directed electives permits special training for work with animal feed companies; milk, egg or poultry operations; food processing industries; managerial or marketing groups; supply and equipment cooperatives; agricultural extension services; public relations; and other organizations associated with animal production or management.

Opportunities are afforded students in animal science to obtain practical experiences in beef, dairy, sheep, swine, and equine operation and management through the University herds of registered livestock. An automated milking parlor, dairy barn, beef barn, crop lands, and pastures are utilized for instruction and student training. A meats laboratory for the study of meat cutting, preservation, storage and utilization, and a dairy processing plant equipped for processing fluid milk and manufacturing dairy products provide students opportunities for acquiring scientific and practical experiences in different aspects of processing meat and dairy products. Breaking, training, and breeding services are offered to the equine industry as an integral part of Tech's popular equine program within the Agricultural Sciences Department. Prominent stallions, representing some of the most popular bloodlines in America, are utilized in the breeding program. A nationally affiliated chapter of the Block and Bridle Club and the Pre-Vet Club provide social and educational activities for students pursuing animal science as a profession.

Animal Science Curriculum (B.S.)

Freshman Year
- Animal Science 111 3
- Arts (GER) 3
- Natural Sciences (GER)
  - Biological Sciences 130, 131, 132, 133 8
- English (GER) 6
- Mathematics (GER)
  - Mathematics 101 or 111 and 112 6
- Social Sciences (GER) 3
- Plant Science 101 3

32

Sophomore Year
- Agricultural Business 220 3
- Animal Science 201, 202, 204 or 211 3
- Biological Sciences 214 or 260 4
- Natural Sciences (GER)
  - Chemistry 100, 101, 102, 103, 104 8
- Humanities (GER)
  - History 3
  - English 201 or 202 3
  - Speech 110 or 377 3
- Computer Literacy (GER) 3
- Directed Electives* 2

32

Junior Year
- Agricultural Business
  - Any 300 or 400 level** 3
- Animal Science 301, 309, 405 9
- Humanities (GER)
  - English 303 3
- Biological Sciences 200 or 310 3
- Directed Electives* 6
- Plant Science 211, 310 6

30

Senior Year
- Agricultural Business 411 1
- Animal Science 315 or 407 or 408 or 410 3
- Animal Science 318, 401, 409 7
- Social Science (GER) 6
- Agricultural Science 320 3
- Directed Electives* 10

30

Total Semester Hours 124

(GER): General Education Requirements (pg. 29)

*Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

**Does not include Agricultural Business 411.

Dairy Production Concentration Directed Electives

Animal Science 302, 307 and 418;
Animal Science 304 or 305 or 306;
Biological Sciences 416 plus 2 additional directed elective hours.

Dairy Processing Concentration Directed Electives

Animal Science 302, 304, 305, 306 and 430
Biological Sciences 416

Equine Science Concentration Directed Electives

Animal Science 307, 322, 324, 420, and 440 plus 4 additional directed elective hours.

Livestock Production Concentration Directed Electives

Animal Science 204, 307, 315, 410, and 418; plus 6 additional directed elective hours.

General Animal Science Concentration Directed Electives

Eighteen hours of directed electives

Pre-Veterinary Medicine Concentration Directed Electives

Chemistry 250, 251, 252, and 351, Physics 209, 210 plus 3 additional directed elective hours.

Applications to Veterinary Medicine Programs

Students in the pre-veterinary medicine concentration who have an exceptional grade point average and an acceptable score on the Medical College Admissions Test (MCAT) or Graduate Record Examination (GRE) may wish to apply for admission to veterinary school during their junior year. Such a student may receive a Bachelor of Science degree in Animal Science from Louisiana Tech University after completing one year of veterinary school if they meet the following criteria: (1) completion of 90 credit hours, (2) completion of the General Education Requirements, (3) completion of the following Agricultural Sciences requirements: Animal Science 111 plus 12 additional hours of 300-400 level courses; Biological Sciences 130, 131, 132, 133, 260 ; Chemistry 100, 101, 102, 103, 104, 250, 251, 252, and 351. The student must arrange for transfer of credit and follow the procedures applicable for graduation at Louisiana Tech University.

The pre-veterinary medicine concentration at Louisiana Tech University is based on requirements for application to the veterinary program at Louisiana State University in Baton Rouge. Application for admission to the veterinary program at Louisiana State University is made in October for admission in the fall of the following year. The MCAT or GRE score must be provided from the year prior to application for admission. Requirements for admission to professional veterinary programs in other states may vary.

Only residents of Louisiana and Arkansas are normally eligible to apply for admission to the LSU Veterinary School. Residence status is determined by LSU and residence status at

Louisiana Tech University has no bearing on such determination.

Requirements for a Minor in Animal Science: Twenty-one hours with a minimum of 9 hours in 300-400 level courses. Courses may be selected from Animal Science 111 plus any combination of other animal science courses. All courses applied toward the minor must be completed with the grade of "C" or higher.

Plant Science

The plant science curriculum culminates in a Bachelor of Science degree with a concentration in agronomy or horticulture. Both deal with the cultural and applied aspects of plant production.

Students learn about plant science in a variety of laboratory facilities: 5,000 square foot conservatory, approximately 25,000 square feet of glass and aluminum greenhouse space, computer lab, crops lab, pest management lab, soils lab, grafting and propagation lab, six additional greenhouses, a vegetable garden, a landscape display garden, an arboretum, turf plots, and agronomy field plots.

The Horticulture Club sponsors the annual Poinsettia Show and participates in an annual educational tour of horticulture in different regions of the United States.

Plant Science Curriculum (B.S.)

Freshman Year
Natural Sciences (GER)
- Biological Sciences 130, 131, 216, 217 8
- Chemistry 100, 101, 102, 103, 104 8

English (GER) 6
Mathematics (GER)
- Mathematics 101 or 111, 112 6

Plant Science 101 3

31

Sophomore Year
Computer Literacy (GER) 3
Humanities (GER)
- English 201 or 202 3

History 3
Speech 110 or 377 or English 463 3
Social Sciences (GER) 9
Plant Science 310, 311 4
Directed Elective* 3
Electives 3

31

Junior Year
Agricultural Business 220 3
Biological Sciences 200 or 310 3
Biological Sciences 214 or 260 4
Biological Sciences Elective 3
Humanities (GER)
- English 303 3

Arts (GER) 3
Plant Science 430 3
Directed Electives* 9

31

Senior Year
Agricultural Business Elective 3
Agricultural Business 411 1
Agricultural Sciences 320 3
Directed Electives* 24

31

Total Semester Hours 124
(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

Agronomy Concentration Directed Electives
(Select 30 hours from the following list)

Agricultural Science 477, 478, 479, Environmental Science 300, Physics 209, Plant Science 211, 309, 312, 320, 400, 403, 409, 421, 422, 423. Agricultural Business or Animal Science Electives.

Horticulture Concentration Directed Electives
(Select 30 hours from the following list)

Agricultural Science 477, 478, 479, Environmental Science 300, Plant Science 284, 300, 301, 302, 312, 320, 384, 400, 403, 420, 421, 422, 423, 440, 441. Agricultural Business Electives.

General Plant Science Concentration
(33 hours of Directed Electives)

Requirements for a Minor in Plant Science: Twenty-one hours with a minimum of 9 hours in 300-400 level courses. Courses may be selected from Plant Science 101 plus any combination of other Plant Science courses (exception-Plant Science 400). All courses applied toward the minor must be completed with the grade of "C" or higher.

School of Biological Sciences

The curricula and courses offered by the School of Biological Sciences are designed to prepare students to meet a broad range of career goals. Two undergraduate degrees are offered: Bachelor of Science in Biology and Bachelor of Science in Medical Technology. Each degree program includes general education courses; a group of required courses in biology, chemistry, mathematics, and physics; and electives, selected with approval of the advisor, appropriate to a program. The graduate curriculum leads to the Master of Science in Biology.

Biology

Students completing a degree in Biology select a concentration based upon their career goals. Students are urged to consult with advisors in selecting the concentration that is best suited to their post-graduate career. The course work in animal biology, cell and molecular biology, and microbiology satisfies the course requirements for entrance to most graduate, medical and dental schools, as well as other medical fields if certain electives are taken. Graduates in microbiology are in demand as research assistants in various academic and industrial laboratories.

Occasionally, students are accepted to and enroll in medical, dental, or other professional school before completion of the bachelor's degree. Such a student may make application to receive a Bachelor of Science degree in Biology from Louisiana Tech University after successfully completing one year of professional school provided the following criteria are met: (1) completion of the General Education Requirements, and (2) completion of 90 semester credit hours to include Biological Sciences 130-133, 310, 313; 320 or 335 or 405; Chemistry 100-104 or 107, 108; 250-254; 351, 352; Statistics Elective.

The opportunities for graduates in plant biology are varied, including employment in state and federal agencies such as agricultural experiment stations and the National Park Service. Graduate work in plant biology can lead to teaching and research opportunities.

The applied biology concentration provides a wide variety of elective choices to prepare students for postgraduate study or for jobs as research assistants and managers in a wide range of academic and industrial laboratories, state and federal agencies, and private industry. This concentration is not suitable for students intent on applying to medical or dental schools, but may be "customized" to fulfill requirements for admission to allied health programs.

To graduate with a Bachelor of Science in Biology, the student must have a minimum grade point average of 2.0 in all

Biological Sciences courses taken and may not have earned less than a grade of "C" in a required biological sciences course.

Biology Curriculum (B.S.)

Freshman Year
Natural Sciences (GER)
Biological Sciences 130, 131, 132, 133, 260 12
English (GER) 6
Mathematics (GER)
Mathematics 101, 112 6
Directed Electives* 8

32

Sophomore Year
Humanities (GER)
English 201 or 202 3
History Elective 3
Physics 209, 210, 261, 262 8
Directed Electives* 14-17

28-31

Junior Year
Computer Literacy (GER) 3
Humanities (GER)
English 303 3
Speech 110, 377, or English 463 3
Social Science (GER) 3
Directed Electives* 14-15
Statistics 3
Electives 3

32-33

Senior Year
Arts (GER) 3
Biological Sciences 313, 480 4
Social Science (GER) 3
Directed Electives* 10-13
Electives 6

29-32

Total Semester Hours 124
(GER): General Education Requirements (pg. 29)
*Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

Animal Biology Concentration Directed Electives
Freshman Year: Chemistry 100, 101, 102, 103, 104 (8) Sophomore Year: Biological Sciences 290, 320, 321 (8); Chemistry 250, 251, 252, 253, 254 (8) Junior Year: Biological Sciences 310 (3); Biological Sciences Elective (3); Chemistry 351, 352, 353, 354 (8) Senior Year: Biological Sciences Electives (11)

Applied Biology Concentration Directed Electives
(Does not meet the minimum requirements for admission to medical or dental school.)
Freshman Year: Chemistry 100, 101, 102, 103, 104 (8) or Chemistry 120, 103, 121, 122 (8) Sophomore Year: Biological Sciences Anatomy Elective (4); Biological Sciences 315, 320 & 321 or 335 or 405 (6-7); Biological Scienecs Electives (6) Junior Year: Biological Sciences 310 (3); Biological Sciences Elective (3); Science Electives (9) Senior Year: Science Electives (10)

Cell and Molecular Biology Concentration Directed Electives
Freshman Year: Chemistry 100, 101, 102, 103, 104 (8) Sophomore Year: Biological Sciences 315, 320 or 405 (6); Chemistry 250, 251, 252, 253, 254 (8) Junior Year: Biological Sciences 310 (3); Biological Sciences Elective (3); Chemistry 351, 352, 353, 354 (8). Senior Year: Biological Sciences 422 (3); Biological Sciences Electives (10)

Microbiology Concentration Directed Electives
Freshman Year: Chemistry 100, 101, 102, 103, 104 (8) Sophomore Year: Biological Sciences 335, 408 (7); Chemistry 250, 251, 252, 253, 254 (8) Junior Year: Biological Sciences 402, 404 (4); Biological Sciences Elective (3); Chemistry 351, 352, 353, 354 (8) Senior Year: Biological Sciences 401, 422 (6); Biological Sciences Electives (5)

Plant Biology Concentration Directed Electives
Freshman Year: Chemistry 100, 101, 102, 103, 104 (8) Sophomore Year: Biological Sciences 205, 221, 222 (9); Chemistry 250, 251, 252, 253, 254 (8) Junior Year: Biological Sciences 310 (3); Biological Sciences Elective (3); Chemistry 351, 352, 353, 354 (8) Senior Year: Biological Sciences 216, 217, 405 (7); Biological Science Elective (3)

Requirements for a Minor in Biology

Twenty-one hours of Biological Sciences (BISC) courses with a minimum of 9 hours in 300-400 level courses. Course selection must include Biological Sciences 130, 131, 132, 133, 310, 313, plus a physiology course (Biological Sciences 320 & 321, or 335, or 405). All courses applied toward the minor must be completed with the grade of "C" or higher.

Medical Technology (Clinical Laboratory Science)

Medical technologists (clinical laboratory scientists) are clinical specialists who design, perform, evaluate, and supervise biological, chemical, and other clinically related tests. Job opportunities for these specialists exist in hospitals, clinics, research facilities, government agencies, educational institutions, and industries.

Graduates of the program in Medical Technology are required to complete 125 semester hours of specified course work, which includes one calendar year (40 semester hours) of professional course work in an accredited medical center program affiliated with Louisiana Tech University. These programs are located in metropolitan areas throughout the region and provide "hands on" training. Affiliated medical center programs are located at Lake Charles Memorial Medical Center, Lake Charles, LA; Our Lady of the Lake Medical Center, Baton Rouge, LA; Rapides General Hospital, Alexandria, LA; St. Elizabeth Hospital, Beaumont, TX; St. Francis Medical Center, Monroe, LA; Veterans Administration Medical Center, Shreveport, LA; Wadley Regional Medical Center, Texarkana, TX, Baptist Health System, Little Rock, AR, and Comanche County Memorial Hospital, Lawton, OK.

During the third quarter of the sophomore year, students are counseled as to their progress toward meeting the minimum academic requirements for admission to the professional education component. This evaluation is based on the student's progress in completing all required pre-professional courses, a minimum cumulative grade point average of 2.7, no grade less than "C" in a subject area, and the recommendation of the program faculty.

Students who meet the criteria listed above are allowed to complete the formal application process to professional training sites. Applications should be completed by the end of the third quarter of the sophomore year. Applicants are admitted to the professional programs on a competitive basis by using both academic and non-academic criteria. Admission decisions are made by the Admissions Committee at each site. Applicants are informed of the decision of the Admissions Committee by the first quarter of the junior year. Students who are not selected for admission are counseled as to their deficiencies and of appropriate remedial action or alternative career opportunities.

Students who are accepted into the professional program enroll in courses chosen by the student and the Program Coordinator. On-campus registration for these students is coordinated with campus faculty with appropriate fees paid by the student at the time of registration. The student must comply with all University policies and the policies of the clinical affiliate. These policies are stated in the bulletin or the program brochure of each clinical site. Students must maintain a grade of "C" or better in all clinical courses. Students who fail to follow these policies are dropped from the program. On-site living expenses are the responsibility of the student. University financial aid (loans, grants, scholarships) is available to students during clinical training.

After completion of professional education, the student is awarded the Bachelor of Science degree and is eligible for professional certification, which is achieved by passing a nationally recognized registry examination.

Medical Technology Curriculum (B.S.M.T.)

Freshman Year
Natural Sciences (GER)
Biological Sciences 130, 131, 224, 226 8
Chemistry 100, 101, 102, 103, 104 8
English (GER) 6
Mathematics (GER)
Mathematics 101 or 111 3
Statistics 200 3
Social Sciences (GER)
Psychology 102 or Sociology 201 3
31

Sophomore Year
Biological Sciences 250, 260, 406, 446 13
Chemistry 250, 251, 252 6
Humanities (GER)
English 201 or 202 3
History 3
Social Sciences (GER) 6
31

Junior Year
Biological Sciences 245, 341, 402, 445 12
Clinical Laboratory Science 457 2
Humanities (GER)
English 303 3
Speech 110 or 377 3
Arts (GER) 3
Directed Electives* 8
31

Senior Year
Directed Electives* 32
32

Total Semester Hours 125
(GER): General Education Requirements (pg. 29)
*The student and Program Coordinator will choose courses from Clinical Laboratory Science 460-489.

Requirements for a Minor in Medical Technology

Twenty-one hours of coursework chosen from Biological Sciences 245, 250, 260, 341, 402, 445, 446, 447, and Clinical Laboratory Sciences 450, 457. All courses applied toward the minor must be completed with the grade of "C" or higher.

Pre-Professional Coursework

The School of Biological Sciences offers coursework to prepare students for entrance into health profession curricula offered at institutions other than Louisiana Tech University. The pre-professional coursework necessary for admission to these programs is specified by the admitting institution, not Louisiana Tech University. Furthermore, admission criteria and pre-professional course requirements vary with each professional program. Therefore, it is the responsibility of each student to obtain a catalog from the school where he or she plans to attend and determine which courses are required. Admission to professional phases of all programs is on a competitive basis. Furthermore, it should be noted that although some programs will consider students after two years of coursework at Louisiana Tech, in reality many students are admitted only after completion of a baccalaureate degree. The following sections are for informational purposes only. Students should routinely consult with their academic advisor for changes in pre-professional course and program requirements.

Pre-Physical Therapy

A baccalaureate degree in any discipline that includes the courses listed below is required for entry into the M.S. program at Louisiana State University Medical Center:

English (GER) (6); Advanced English Composition or Technical Writing (3); Chemistry 100, 101, 102, 103, 104 (8); Biological Sciences 130, 131, 132, 133 (8); Physics 209, 210, 261, 262 (8); Advanced Biology (recommended Biological Sciences 315 or 407) (3); Anatomy and Physiology (Biological Sciences 225, 228) (6); Mathematics (GER) (6); Psychology 102 and Psychology Elective (Abnormal or Growth and Development) (6); Statistics (3); Computer Literacy (GER) (3); Speech 110 or 377 (3).

Pre-Cardiopulmonary Science (Respiratory Therapy)

Students may be admitted without a degree to the program at Louisiana State University Medical Center upon completion of the following requirements:

English (GER) (6); Humanities (recommended: English Literature, English 303, Advanced Composition, or Foreign Language) (9); Chemistry 100, 101, 102, 103, 104 (8); Mathematics (GER) (6); Biological Sciences 130, 131, 132, 133 (8); Science Elective (Biological Sciences 225, 227) (6); Psychology 102 (3); Physics 209, 261 (4); Biological Sciences 214 (4); Arts (GER) (3); Computer Literacy (GER) (3).

Physician Assistant

Although it is possible for students to be admitted without a degree to the program at Louisiana State University Medical Center, it is more likely that admission will be granted upon completion of a degree in any discipline that includes the following requirements:

Arts (GER) (3); Computer Literacy (GER) (3); English (GER) (6); Humanities (recommended foreign languages, philosophy, religion, literature, speech/communications) (9, at least 3 hours at sophomore level or above); Psychology 102 and Psychology Elective (child, developmental, etc) (6); Social Sciences (GER) (3); Mathematics (GER) (6); Chemistry 100, 101, 102, 103, 104 (8); Biological Sciences 225, 226 (4); Physics 209, 261 (4); Biological Sciences 130, 131, 214, (8).

Pre-Occupational Therapy

Students may be admitted without a degree to the program at Louisiana State University Medical Center upon completion of the following requirements:

Biological Sciences 130, 131, 132, 133, 224 (11); Arts (GER) (3); Chemistry 100, 103 (3); Computer Literacy (GER) (3); English (GER) (6); English 201 or 202 (3); Humanities Electives (6); Mathematics (GER) (6); Psychology 102 (3); Psychology Electives (adjustment, child, adolescent, social) (6); Physics 209, 261 (4); Sociology 201 (3).

Pre-Radiologic Technology

Students may be admitted without a degree to the program at University of Louisiana at Monroe upon completion of the following requirements:

Mathematics 101, 112 (6); English (GER) (6); Chemistry 100, 101, 103 (5); Biological Sciences 225, 226, 227, 228, 346 (10); Psychology 102 (3); Health Information Management 103 (3); Physics 209, 210, 261, 262 (8); English 201 or 202, 303 (6); History (3); Arts (GER) (3); Speech 110 or 377 (3); Computer Literacy (GER) (3); Sociology 410, Clinical Laboratory Science 450.

Pre-Pharmacy

The University of Louisiana at Monroe offers two pharmacy programs, one baccalaureate and one leading to the Doctor of Pharmacy. The following requirements are necessary for both:

Accounting 201 (3); Biological Sciences 130, 131, 214 (8); Chemistry 100, 101, 102, 103, 104, 250, 251, 252, 253, 254 (16); Economics 201 or 215 (3); Humanities (foreign languages, history, literature, philosophy, religion, speech) (8); Arts (GER) (3); English (GER) (6); English 201 or 202 (3); H&PE 150 (2); Math (GER) (6); Math 220 (3); Physics 209, 210, 261, 262 (8); Psychology 300 (3); Sociology 410 (3).

Pre-Optometry

Nearly all students admitted to professional programs in optometry have a baccalaureate degree. Because there are no schools of optometry in Louisiana, it is difficult to specify the admission requirements for the out-of-state schools. Therefore, students should obtain a catalog from the school(s) in which they are interested and adapt an existing degree program at Louisiana Tech. Nevertheless, the listing below gives some idea of the courses required by the three nearest optometry schools:

Biological Sciences 130, 131,132, 133, 214, 225, 227, 320, 321 (20); Chemistry 100,101,102,103,104,250, 251, 252, 253, 254, 351 (19); English (GER) (6); Mathematics 101 or 111, 240 (6); Physics 209, 210, 261,262 (8); Psychology 102 (3); Social Science Electives (6); Statistics (3).

The Graduate Program

Master of Science Degrees offered by the School of Biology are described in the graduate section of the University Bulletin.

Interdisciplinary Degree in Environmental Science

The environmental science program consists of a multi-disciplinary curriculum emphasizing pure and applied sciences, and the application of critical thinking to environmental problems. Participating academic units include agricultural sciences, biological sciences, chemical engineering, forestry, and geosciences. The curriculum incorporates twenty-two (22) hours of directed electives to allow students to obtain a minor in a specialized field of interest. Numerous minors are available at Louisiana Tech University; specific requirements for minors are identified in the departmental sections of the Bulletin.

This program allows students to focus on particular career interests such as assessment, policy, management, research, or occupational health and safety. A junior or senior internship or cooperative education experience is important in preparing students for a career in environmental science; thus students are ready for a wide range of employment opportunities. Potential employers are regulatory agencies, industrial firms, commercial laboratories, consulting firms, and environmental organizations. Graduates may also pursue enrollment in professional or graduate schools.

Environmental Science Curriculum (B.S.)

Freshman Year
- Environmental Science 200 3
- Natural Sciences (GER)
  - Biological Sciences 130, 131, 132, 133 8
- Chemistry 100, 101, 102, 103, 104 8
- English (GER) 6
- Mathematics (GER)
  - Mathematics 111, 112 6

31

Sophomore Year
- Biological Sciences 216, 217 4
- Chemistry 121 3
- Computer Literacy (GER) 3
- Humanities (GER)
  - English 303 3
  - English (Literature) 3
- Arts (GER) 3
- Geology 111, 121 4
- Social Sciences (GER)
  - Geography 3
- Mathematics 220 3

29

Junior Year
- Environmental Sciences 313 3
- Biological Sciences 260 4
- Chemistry 205 4
- Environmental Sciences 477/478/479 (recommended) or Special Problems 3
- Environmental Science 310, 311 4
- Social Sciences (GER)
  - Political Science 3
  - One other Social Sciences discipline 3
- Humanities
  - English 463 or Speech 110, 377 3
- Statistics 3

30

Senior Year
- Environmental Science 444 3
- Environmental Science 400, 458 4
- Humanities (GER)
  - History 3
- Directed Electives* 22

32

Total Semester Hours 122

(GER): General Education Requirements (pg. 29)

*Students are expected to obtain a minor in an area of their choice; if students choose not to seek a minor, directed electives are selected from the following: Animal Science, Biology, Chemical Engineering, Chemistry, Environmental Science, Forestry, Geography, Geology, Physics, and Plant Science.

Students are required to complete individual professional courses (Biology, Chemistry, Environmental Science, Geology, Statistics, and Directed Electives) with a minimum grade of "C".

Requirements for a Minor in Environmental Science

Twenty-one hours course work to include Geology 111, Environmental Science 200, 310, 313, 417, 458, and three (3) hours of Biological Sciences, Chemistry, Environmental Science, Forestry, Geology, or Plant Science at the 300 level or above. All courses applied toward the minor must be completed with the grade of "C" or higher.

School of Forestry

Mission:

The mission of the School of Forestry is "To enhance the social, ecological, and economic value of forest resources for the citizens of Louisiana and the nation through professional education, basic and applied research, and service to the public and natural resource managers."

The specific goals are to

1. maintain an accredited undergraduate forestry education program,
2. maintain an undergraduate wildlife conservation education program, that meets certification requirements of The Wildlife Society,
3. conduct research relevant to enhancing Louisiana's forestlands and associated natural resources, and
4. conduct continuing education and service activities to meet the needs of Louisiana's forest landowners.

Degree Programs

The School of Forestry offers two degree programs. One leads to a Bachelor of Science in Forestry (BSF) and the other to a Bachelor of Science in Wildlife Conservation (BS). The Forestry curriculum is designed for students who desire scientific knowledge of conservation and management of forestry resources, such as timber inventory, site productivity, resource protection, and many other activities carried out in the production of wood and wood fiber. The Wildlife Conservation curriculum is designed for students who desire scientific knowledge of the conservation and management of wildlife. This curriculum emphasizes the life history, habitat relationships, and habitat management of wildlife species and communities. Students are trained as managers, naturalists, and researchers through course work and practical experience with wildlife professionals.

Students are encouraged to complete at least one internship (on-the-job experience) during their course of study. The Forestry curriculum requires that students complete individual professional courses (Forestry prefix) with a minimum grade of "C" and maintain a minimum grade point average of 2.0 on all courses taken. The Wildlife Conservation curriculum requires that students complete individual professional courses (Forestry and Biological Sciences prefixes) with a minimum grade of "C" and maintain a minimum grade point average of 2.0 on all courses taken..

The Forestry degree program is accredited by the Society of American Foresters (SAF), an association representing some 17,000 forestry professionals in the United States. The Society is recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education as the accrediting body for forestry in the United States. Graduating seniors are expected to pass the Registered Foresters Exam offered by The Mississippi Board of Registration for Foresters or similar competency exam. The Wildlife Conservation degree program meets the certification requirements of The Wildlife Society, and graduates may apply for certification as an Associate Wildlife Biologist.

Field Session

Successful completion of the Forestry Field Session during the junior year is a prerequisite for senior standing. Students who have completed all prerequisites, including all 100 level courses, FOR 205, 206, 301 (or BSCI 313), 302, 306, 405, MATH 212, and have at least an overall "C" average are eligible to enroll. Field Session students are also required to meet the conditions as outlined in the Forestry Field Session Academic and Operating Policies document which is available from the School of Forestry upon request.

Field Trips

During the junior and senior years, field trips are made to forest production areas, wood-using plants, and wildlife management areas. These enable students to observe forestry, wildlife management, research, and wood-using activities of private companies and government agencies. Many of the important forest types and management activities, as well as a wide variety of wood-using industries, are located near campus.

Expenses

Field trips cannot always be arranged within the scheduled laboratory hours. In some cases, students must leave the campus earlier and return later than the published class schedule. The payment for meals and lodging when overnight trips are necessary are the responsibility of the individual student. This includes the field session. In addition to regular expenses, a special fee is charged each student who attends the field sessions.

Each student registering for any forestry or biological sciences course involving field laboratory work should have, for self-protection, an accident insurance policy. Policies are available during registration to all students for a reasonable cost.

A number of student assistants are employed by the School each year. This enables the students to work part-time while attending school.

Transfer Credit

Students may complete 60 semester hours of the forestry or the wildlife conservation major at regionally accredited institutions. However, transfer credit will only be accepted for courses completed with a "C" or higher grade and must be approved during the student's first quarter at Tech.

The professional core courses in forestry and wildlife conservation must be completed at Louisiana Tech University.

Students who are considering transfer to the School of Forestry should contact the Director's Office, School of Forestry, prior to enrollment at other institutions.

Forestry Curriculum (B.S.F.)

Freshman Year
Natural Sciences (GER)
- Biological Sciences 134 ... 3

Social Sciences (GER)
- Economics 201, 202, or 215 ... 3
- Two other Social Sciences courses ... 6

English (GER) ... 6
Arts (GER) ... 3
Forestry 101 ... 1
Mathematics (GER)* ... 3
Elective ... 3

28

Sophomore Year
Natural Sciences (GER)
- Chemistry 120, 121, 122 or
- Chemistry 100, 101, 102, 103, 104 ... 7

Humanities (GER)
- English 201 or 202 ... 3
- History ... 3

Forestry 202, 205, 206, 211, 312, 313 ... 12
Mathematics (GER)* ... 3
Statistics Elective** ... 3

31

Junior Year
Humanities (GER)
- English 303 ... 3

Forestry 301, 302, 306, 314, 315, 317, 318, 319, 320, 324, 355, 405 ... 31

34

Senior Year
Forestry 322, 401, 402, 404, 406, 410, 413, 425 ... 22
Humanities (GER)
- Speech 110 or 377, or English 463 ... 3

Electives ... 7

32

Total Semester Hours ... 125

(GER): General Education Requirements

*Mathematics must be one of the following:
1. Math 101 and Math 212, or
2. Math 112 and Math 220, or
3. Math 112 and Math 222

**Statistics Elective: AGSC 320, QA 233, PSYC 300, or STAT 200

Wildlife Conservation Curriculum (B.S.)

Freshman Year
Natural Sciences (GER)
- Biological Sciences 130, 131, 132, 133 ... 8
- Chemistry 120, 121, 122 or Chemistry 100, 101, 102, 103 ... 7

Forestry 101 ... 1
English (GER) ... 6
Mathematics (GER)
- Mathematics 101, 212 ... 6

Social Sciences * (GER) ... 3

31

Sophomore Year
Biological Sciences 200 or 310 ... 3
Forestry 205, 206 ... 3
Humanities (GER)
- English 201 or 202 ... 3
- History ... 3
- Speech 110 or 377 ... 3

Social Sciences * (GER) ... 6
Arts (GER) ... 3

Statistics 3

27

Junior Year
Biological Sciences 221, 313**, 317, 458 12
Forestry 302, 306, 314, 315, 317, 320, 324, 405 21

33

Senior Year
Biological Sciences 413, 432, 433 9
Animal Science 309 3
Forestry 355, 401, 410, 445 12
Humanities (GER)
English 303 3
Elective*** 7

34

Total Semester Hours 125

(GER): General Education Requirements (pg. 29)
*Must take Geography , Political Science, Psychology, Sociology or Economics (minimum of two disciplines).
**Students are strongly encouraged to take Biological Sciences 313; however, students may elect Forestry 301 if their career goals dictate.
***Students are strongly encouraged to use elective credits to complete an internship or cooperative education experience and Forestry 455, Intermediate Geographic Information Systems.

Requirements for a Minor in Forestry: Twenty-two or 23 hours to include Forestry 202, 205, 301, 302, 306, 355 or 404, 406, 312 or 313. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Geographic Information Science: Twenty-two hours to include Forestry 317, 324, 355, 455; GEOG 380, 480, and one additional Geography course; one quantitative methods course from the following: AGSC 320, QA 233, STAT 200, 400, 402, or 405. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Wildlife Conservation: Twenty-one hours to include BISC 317, 432, 433; FOR 314; BISC 313 or FOR 301; BISC 221 or FOR 205, 206; three semester hours to be selected from the following: BISC 401; BISC 428 or FOR 428; ANSC 309; FOR 355, 445. All courses applied toward the minor must be completed with the grade of "C" or higher.

Department of Health Information Management

Health Information Management professionals collect, integrate, and analyze primary and secondary health care data, disseminate information, and manage information resources related to the research, planning, provision, and evaluation of health care services.

High school students planning to enter a Health Information Management program should take the general college preparatory courses and be computer literate.

Applicants for readmission and transfer students must meet program criteria at the time of admission to the program. If application for readmission occurs more than three quarters since the student was enrolled in a Health Information Management (HIM) course, a committee of Health Information Management faculty will determine placement in the curriculum and any remedial course work necessary. Transfer credit from another accredited health information management program in a regionally accredited college will be evaluated to determine similarity of course content. Courses with the same content in which the student earned at least a "C" can be transferred. Credit from a non-accredited program will be granted provided the course is the same in content, the student earned at least a "C" in the course, and mastery of course material is validated by examination. The Health Occupations Basic Entrance Test (HOBET) is required prior to registering in HIM 107.

Students are required to adhere to stated prerequisite courses. A request for a waiver of a stated prerequisite course must be submitted to the student's advisor who will make a recommendation to the committee of HIM faculty. The committee will consider overall GPA, HIM GPA, and prior work experience in their decision.

The Health Information Management programs include a professional practice component in which the student performs medical record procedures in hospitals and other health care facilities. To be eligible to register for the professional practice, the student must earn a minimum grade of "C" in prerequisite courses, achieve a minimum GPA of 2.25 in the curriculum, and have the approval of the committee of HIM faculty. In addition to regular University fees, students beginning directed practice must provide name pins and their own transportation. The quarter preceding graduation is spent at off-campus affiliated sites where the student will gain experience in a variety of health care organizations. The course number in which the student enrolls will be determined by the geographic location of the clinical sites from Louisiana Tech University: 100 miles, 101-200 miles, and over 200 miles. These experiences may be clustered in the north Louisiana area. There are additional sites in other cities in Louisiana, Texas, Mississippi, Arkansas, and other states for students who are able to spend a period of time in another area. Each student's professional practice experience is individually planned with the student to fulfill the educational requirements within the student's financial and travel limitations. These professional practice experiences will be scheduled for students who have

1. completed all course work on-campus
2. have no grades in required courses in the curriculum less than a "C,"
3. have a curriculum GPA of no less than 2.25,
4. and have an overall GPA of no less than 2.0.

A student's professional practice experience will be terminated for inappropriate professional behavior and lack of adherence to ethical standards. The student who terminates a professional practice experience without permission from the HIM professional practice coordinator and the professional practice site will not be scheduled for further professional practice experiences.

If a student wishes to enroll in a professional practice course after a lapse of more than three quarters since completion of the prerequisite courses, a committee of HIM faculty will determine whether remedial course work is necessary before placing the student in professional practice.

Louisiana Tech offers Health Information Technology graduates the opportunity to progress towards the four year degree. This is done by attending video compressed classes and participating in internet classes. Students are required to have an associate degree in HIT and possess RHIT credentials obtained within the last three years. Progression students must complete all junior and senior classes. A minimum of 2.0 grade point average and 122 semester hours are required to receive the B.S. in Health Information Administration.

Students must earn a "C" in all required courses before being eligible for graduation from the program. A HIM student may repeat only one HIM course, elective or required. The student will be permanently suspended from the HIM programs following the second HIM course grade below a "C."

Students seeking information concerning admission to the Health Information Management programs may contact the Health Information Management Department, P.O. Box 3171, Louisiana Tech University, Ruston, LA 71272.

Health Information Technology

The associate degree curriculum emphasizes the technical component of providing a variety of health information services.

The Health Information Technology (HIT) program requires six quarters of study on campus plus one quarter off campus at professional practice sites.

Students must complete certain courses in a specified sequence in order to complete their studies within the two-year time frame. Therefore it is very important that first-year students develop a plan of study with their assigned advisor. This plan of study will be placed on file in the Department of Health Information Management office before or during registration for the Winter Quarter. Failure to develop a curriculum plan with the advisor and to follow the plan could prolong the course of study.

The program is accredited by the Commission on Accreditation of Allied Health Education Programs in cooperation with the Council on Accreditation of the American Health Information Management Association. Graduates of the program are eligible to apply to write the accreditation examination of the American Health Information Management Association. Graduates who pass this examination may use the credential, RHIT, Registered Health Information Technician. The two-year program leads to the Associate of Science degree.

Health Information Technology Curriculum (A.S.H.I.)

Freshman Year
English (GER) 6
Health Information Management 103, 107, 108, 115, 120, 280 14
Mathematics (GER)
Mathematics 101 3
Statistics 200 3
Biological Sciences 225, 227 6
Computer Literacy (GER)
Computer Information Systems 201 3

35

Sophomore Year
Health Information Management 200, 207, 208,217, 218, 219, 224, 226, 228, 229, 234, 235, 277/278/279, ... 31
Management 470 3

34

Total Semester Hours 69
(GER): General Education Requirements (pg. 29)

Health Information Administration

The baccalaureate degree curriculum emphasizes the development of skills for the management of health-related information and the systems used to collect, store, retrieve, disseminate, and communicate information for the support of enterprise operations and clinical and business decision making in health care or related organizations.

The Health Information Administration (HIA) program requires twelve quarters of study on-campus plus one quarter off-campus at professional practice sites.

The Health Information Administration program received the Louisiana State Board of Regents' Commendation of Excellence, the highest recognition awarded to an academic program by this group.

The program is accredited by the Commission on Accreditation of Allied Health Programs in cooperation with the Council on Accreditation of the American Health Information Management Association. Graduates of the program are eligible to apply to write the registration examination of the American Health Information Management Association. Graduates who pass this examination may use the credential, RHIA, Registered Health Information Administrator. This program leads to the Bachelor of Science Degree.

Health Information Administration Curriculum (B.S.H.I.)

Freshman Year
English (GER) 6
Mathematics (GER)
Mathematics 101, 125 6
Computer Literacy (GER)
Computer Information Systems 201 3
Natural Sciences (GER)
Biological Sciences 225, 227 6
Health Information Management 103, 107, 108, 115, 120 11

32

Sophomore Year
Natural Sciences (GER)
Chemistry 120 3
Health Information Management 200, 207, 208, 217,218, 219, 224, 226, 228, 234, 280 24
Social Science (GER)
Psychology 102 3
Quantitative Analysis 233 3

33

Junior Year
Humanities (GER)
English 201, 202 6
Speech 110 or 377 3
Health Information Management 312, 318, 319,330 10
Social Sciences (GER)
Sociology 201 3
Social Sciences Elective* 3
Management 310 3

28

Senior Year
Arts (GER) 3
Humanities (GER)
History 3
Clinical Laboratory Science 450 3
Health Information Management 417, 418, 425, 430, 431, 477/478/479 18
Management 470 3

30

Total Semester Hours 123
(GER): General Education Requirements (pg. 29)
*Economics, geography, political science, advanced psychology, or advanced sociology

School of Human Ecology

Mission

Degree programs offered by the School of Human Ecology include: BA in Merchandising and Consumer Affairs; BS in Family, Infancy, and Early Childhood Education; BS in Nutrition and Dietetics; MS in Family and Consumer Sciences; and MS in Nutrition and Dietetics. A post-baccalaureate non-degree dietetic internship also is offered.

The mission of the School of Human Ecology is to improve the quality of life for individuals and families through education and applied research that emphasizes family systems and consumer sciences. This mission provides the foundation for strong broad-based undergraduate programs and specialized graduate programs that emphasize quality of life, management skills, and the importance of family systems in their historical and contemporary forms.

This mission is implemented through instruction, research, and service which involves

- implementing undergraduate and graduate human ecology curricula that reflect current trends from the rapidly changing and complex professional

environments that are designed to expand students' knowledge of the field, stimulate intellectual curiosity, cultivate original thought and expression, and enhance problem-solving skills,

- contributing to current knowledge through research in human ecology specialized areas, and
- providing professional expertise to other professionals, the university community, and the community-at-large.

Accreditation

Programs in human ecology are planned to meet the highest professional standards. The School of Human Ecology undergraduate programs are accredited by the Council for Accreditation of the American Association of Family and Consumer Sciences. The Nutrition and Dietetics undergraduate curriculum (DPD) is approved by the Commission on Accreditation/Approval for Dietetic Education of the American Dietetic Association and the Dietetic Internship is accredited. Additionally, the teacher preparation programs are included in the University accreditation by the National Council for the Accreditation of Teacher Education and meet state certification standards. The Early Childhood Education Center is accredited by the National Academy of Early Childhood Programs.

Upper Division Requirements

Students in the merchandising, consumer affairs, child life, and family studies concentrations are eligible to apply for upper division status when they have a 2.20 GPA on at least 30 semester hours credit including grades of "C" or above in the following: English 101 and 102, Speech 110 or 377, Mathematics (3 hours), and six hours of human ecology content courses. They must have earned a passing grade in University Seminar 100 and a grade of "C" or better in all human ecology courses taken during the first 30 hours. Students must be admitted to Upper division before enrolling in human ecology courses numbered 300 or above.

Upper division requirements for students with a concentration in early childhood education or family and consumer sciences education are established by the University Teacher Education Council. These students must have earned 46 semester hours or shall have earned that number at the end of the quarter in which application is made. They must have an earned average of 2.5 and a minimum cumulative grade point average of 2.2. Students must have completed University Seminar 100, Health & Physical Education activities (2 hours), Speech 110, Education 125, English 101, 102 and 201 or 202 (9 hours), Science (9 hours), Social Studies (9 hours), and Mathematics (6 hours). A grade of "C" or better must be earned in English 101, 102, Speech 110, Education 125 and MCS 246. At the point of application, students must have a minimum "C" average in science, math, and social studies. Students must have passed the first section of the Praxis Exam. They must have had their speech and hearing checked and rated "satisfactory" by the Louisiana Tech Department of Speech. Applicants must possess those physical, emotional, and mental traits needed for successful performance in a regular classroom and must not be on University academic or disciplinary probation or suspension. Any student seeking admission to upper division who has been convicted of a felony may be denied admission. All applications must be turned in to the human ecology director's office at least one week prior to the beginning of the quarter. A student must be admitted to upper division before enrolling in courses requiring upper division status.

Students in nutrition and dietetics must apply for admission to the upper division specialized phase of the program before their junior year. To be admitted to upper division, students are to have completed 54 hours with a minimum of 35 hours of knowledge requirement courses and have a KR grade point average of 2.85 and no grade less than a "C." KR or knowledge requirement courses are those in which students achieve the core knowledge requirements for entry-level dietitians as specified by the American Dietetic Association (see your advisor or the Director of the School of Human Ecology for additional information).

Scholastic Standards

All students are advised to repeat human ecology courses in which they have grades less than "C" before undertaking the next course of the subject matter series. Students enrolled in the family studies and child life concentrations must earn a "C" or better in all FCS classes in order to meet requirements for graduation. For teacher certification, a grade of "C" or better is required in all human ecology and professional education courses. A grade point average of 2.5 is required for enrollment in student teaching at both the secondary and early childhood levels. A grade point average of 2.5 and acceptable scores on the PRAX-PLT and Early Childhood Education or Family Consumer Sciences specialty exams are required for graduation in the family and consumer sciences education and early childhood education concentrations.

Satisfactory completion of prerequisite courses and a "knowledge requirement" grade point average of 2.85 are required for admission to the junior year of the nutrition and dietetics program. A 2.85 "knowledge requirement" grade point average is required for graduation from this curriculum.

Catalog Requirements and Changes

Human ecology policy, curriculum, and course changes are posted on the bulletin board near the director's office (CTH 251). Posted notices officially update the University bulletins and are as binding to students as the published documents. In addition, job and scholarship announcements, test dates, and planned course schedule changes are displayed. Students are advised to check the boards frequently.

Each student is responsible for meeting curriculum and catalog requirements for graduation, including scheduling of infrequently offered courses and completing courses in sequence. Students should consult with their advisors during early registration and when problems arise. Students with 60-70 hours credit should complete and secure advisor's approval of an up-to-date plan of study for their remaining quarters at Tech.

Non-Major Electives

A number of courses in human ecology are open to non-majors. Suggested electives for students in other colleges include the following:

Family and Child Studies Electives:
100, Marriage and Family Relations; 101, Skills for Marriage; 200, Parenting; 201, Introduction to Child and Family Development; 210, Family Interpersonal Relationships; 301, Early Childhood Development; 320, Family Theory; 331, Infant Development; 341, Issues and Applications in Middle Childhood & Early Adolescence; 380, Understanding Childhood Diseases and Disorders; 395, Research Methods in Family & Child Studies; 400, Contemporary Family Issues; 410, Multi-Cultural Family Studies; 432, Children Under Stress; 435, Family Coping; 447, Issues in Gerontology; 461, Administration of Early Childhood Education/Child Life Programs; 471, The Family and the Legal System; 490, Perspectives in Family and Child Studies.

Merchandising & Consumer Studies Electives:
118, Pattern Design and Construction; 219, Textiles; 238, Apparel Selection; 246 Microcomputers in Personal and Family Management I; 256, Individual and Family Management; 268, Apparel Design I; 308, Buying; 366, Consumer Issues; 416, Interior Space Planning and Furnishings; 426, Housing Policy; 439, Historic Costume I; 440, Historic Costume II; 456, Consumer Decision Making; 498, Field Study Tour in MCS.

Food and Nutrition Electives:
103, Nutrition and Weight Control; 203, Human Nutrition; 220; Life Cycle Nutrition; 223, Nutrition Education; 232, Basic Food Science; 253, Sports Nutrition; 403, Community Nutrition.

Requirements for a Minor in Merchandising

A minimum of 21 hours with at least 9 hours at the 300 level or above to be selected from: Merchandising & Consumer Studies 108, 118, 219, 238, 258, 268, 308, 348, 429, 439, 440, 466, 488, 498; Human Ecology 477, 478, or 479. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Consumer Affairs

A minimum of 21 hours to be selected from: Merchandising & Consumer Studies 108, 256, 258, 366, 426, 456, 466, 498; Human Ecology 327, and 477 or 478 or 479; Family & Child Studies 441, 447, 471. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Family and Child Studies

Required courses include Family and Child Studies 201 and 210. A minimum of 15 semester hours should be selected from the following: Family and Child Studies 100, 200, 277, 301, 320, 331, 400, 410, 420, 432, 435, 441,447,451, or 471. At least twelve hours must be 300 level or above. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Human Nutrition

Required courses in Food and Nutrition include: Food and Nutrition 103, 203, 253, 402, 404, 414, 423, 443. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for an Interdisciplinary Minor in Gerontology (24 semester hours - at least 10 hours must be from courses 300 level or above.)

Core Courses (15 semester hours)
Family and Child Studies 201- Family and Child Development OR Psychology 408 - Human Growth and Development (3); Health & Physical Education 406 - Health Aspects of Aging (3); Sociology 435 - Sociology of Aging (3); Family and Child Studies 447 - Issues in Gerontology (3); Practica - Education 420; Health & Physical Education 112; Human Ecology 467, 477, 478, or 479; or Sociology Practica (3).

Electives (9 semester hours)
Select 9 hours from the courses listed below. Courses selected must be approved by your advisor. It is strongly suggested that ALL students elect either Psychology 475 or Sociology 436 that relate to death and grieving: Counseling 400; Family and Child Studies 210, 320, 400, 420; Food and Nutrition 203; Health & Physical Education 292, 401, 416; Psychology 474, Psychology 475, 480, 499; Sociology 308, 425, 436. All courses applied toward the minor must be completed with the grade of "C" or higher.

Merchandising and Consumer Affairs

Students complete a freshman core of courses and then select a concentration in merchandising or consumer affairs. The consumer affairs concentration prepares students for employment with government and private consumer service agencies and/or businesses related to management and consumer education, customer service, consumer and housing policy, consumer public relations, and cooperative extension. A minor in general business is included in the course requirements.

The merchandising concentration prepares students for careers in merchandising, design, and promotion. Professional preparation includes studies in product creation, production and distribution, textiles, computer applications, and the opportunity to complete a minor in marketing, general business, or art.

In both concentrations, University study is supplemented by experiential learning in local and metropolitan job settings. Travel-study programs provide students opportunities to study the global aspects of their fields.

Merchandising and Consumer Affairs Curriculum (B.A.)

Freshman Year
English (GER) 6
Mathematics (GER)
  Mathematics 101 3
  Mathematics 112, 125, or Statistics 200 3
Merchandising & Consumer Studies 108, 246, 256 8
Natural Sciences (GER) 9
Humanities (GER)
  Speech 110 3
32

Sophomore Year
Accounting 201 3
Social Sciences (GER)
  Economics 215 3
  Psychology 3
  Additional Social Sciences Course 3
Humanities (GER)
  English 201 or 202 3
  Additional Humanities Course 3
Family & Child Studies 201 3
Merchandising & Consumer Studies 258 3
Directed Electives** 6
30

Junior Year
Arts (GER) 3
Humanities (GER)
  History 3
Human Ecology 327, 398 4
Marketing 300, 420 6
Directed Electives** 14
30

Senior Year
Electives 6
Human Ecology 457 1
Human Ecology /Merchandising & Consumer Studies Elective 3
Human Ecology Practic or Merchandising & Consumer Studies 498 3
Journalism 450 3
Merchandising & Consumer Studies 466 3
Directed Electives** 9
28

Total Semester Hours 120

(GER): General Education Requirements (pg. 29)
*Curriculum sheets for both concentrations are available in the Office of the Director of the School of Human Ecology (CTH 251).
**Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

Merchandising Concentration Directed Electives
Sophomore Year: (6 hours) Merchandising & Consumer Studies 219, 238; Junior Year: (11 hours); Merchandising & Consumer Studies 268, 308, 348; Management 470; Senior Year: (12 hours); Merchandising & Consumer Studies 416, 488, 439 or 440; Marketing 435.

Consumer Affairs Concentration Directed Electives
Sophomore Year: (6 hours) Accounting 202; Business Law 255; Junior Year: (11 hours) Family & Child Studies 447; Merchandising & Consumer Studies 426; Free Electives (2 hours); Management 310; Senior Year: (12 hours) Family & Child Studies 441; Finance 318; Merchandising & Consumer Studies 456; Human Ecology electives (3 hours).

Family and Child Studies

Students complete a freshman core of courses and then select a concentration. Early childhood education and family and consumer sciences education are teacher preparation programs that are developed and maintained through the joint activities of the College of Applied and Natural Sciences and Louisiana Tech University Teacher Education Council. Early childhood

education prepares the student to teach in public school early childhood education and kindergarten programs and for careers with young children in centers for children and related programs. Family and consumer sciences education prepares a student to teach vocational family and consumer sciences in Louisiana secondary schools under the provision of the federal Education Amendments of 1976 as outlined in the state plan.

Child life prepares students to become child life specialists primarily in hospital settings. Family sciences prepares students for a variety of human services positions including community support; counseling and youth agencies; law or public policy; business development officers; and employee assistance directors.

Family and Child Studies Curriculum (B.S.)*

Freshman Year
English (GER) 6
Family & Child Studies 201 3
Mathematics (GER)
Mathematics 101 3
Mathematics 111, 125 or Statistics 200 3
Merchandising & Consumer Studies 246 3
Natural Sciences (GER)
Biological Science 3
Humanities (GER)
History 3
Speech 110 or 377 3
Directed Electives** 2-3

29-30

Sophomore Year
Humanities (GER)
English 6
Merchandising & Consumer Studies 256 3
Natural Sciences (GER) 3
Social Sciences (GER)
Psychology 3-6
Additional Social Sciences Courses 3-6
Directed Electives** 9-14

30-32

Junior Year
Arts (GER) 3
Human Ecology 398 1
Restricted Electives 0-6
Directed Electives** 21-31

30-34

Senior Year
Family & Child Studies 410 3
Human Ecology 457 1
Restricted Electives 0-11
Directed Electives** 18-24

30-33

Total Semester Hours 122-125

(GER): General Education Requirements (pg. 29)
*Detailed curriculum sheets for each concentration are available in the School of Human Ecology Director's Office (CTH 251).
**Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

Early Childhood Education Concentration Directed Electives
Freshman Year: (2 hours) Health & Physical Education 150. Sophomore Year: (12 hours) Education 125; Family & Child Studies 276, 277; Health & Physical Education Activity (1); Library Science 201 or 450; Music (2). Junior Year: (31 hours) Education 423, 424, 441; Family & Child Studies 301, 311, 321, 331, 361; Health & Physical Education Activity (2); Science,Bio/Phsy; Special Education 300. Senior Year: (22 hours) Education 420, 475; Family & Child Studies 401, 421, 461; Food & Nutrition 223; Humanities (GER) History 460 or Geography 310; Natural Sciences (GER) (3).

Child Life Concentration Directed Electives
Freshman Year: (3 hours) Family & Child Studies 210. Sophomore Year: (10 hours) Family & Child Studies 280, 291; Human Ecology Practica (1); Health Information Management 103. Junior Year: (22 hours) Electives (3) Family & Child Studies 301, 320, 331, 341, 355, 361; Human Ecology Practica (2); Senior Year: (24 hours) Family & Child Studies 380, 395, 432, 451; Family & Child Studies Elective (6); Human Ecology Practica (3); Natural Sciences (GER) (3).

Family Sciences Concentration Directed Electives
Freshman Year: (3 hours) Family & Child Studies 210. Sophomore Year: (12 hours) Family & Child Studies 100, 101, 200; Natural Sciences (GER) (3). Junior Year: (21 hours); Family & Child Studies 301 or 331 or 341, and 320, 355, and 395; Family & Child Studies Electives (6); Human Ecology Practica (3). Senior Year: (24 hours) Elective (3); Family & Child Studies 400, 420, 435, 447, 471; Human Ecology Practica (3); Social Sciences (GER) (3).

Family & Consumer Sciences Education Concentration Directed Electives
Freshman Year: (2 hours) Education 125; Human Ecology 267A (1). Sophomore Year: (9 hours) Family & Child Studies 200; Food & Nutrition 220; Merchandising & Consumer Affairs 219. Junior Year: (24 hours) Education 403, 471; Family & Child Studies 341; Food & Nutrition 232; Merchandising & Consumer Studies 426, 366; Natural Sciences (GER) (3); Special Education 300; Senior Year: (18 hours) Education 416; Human Ecology 327, 405, 415..

Applied Child Development Concentration Directed Electives
Freshman Year: (3 hours) Family & Child Studies 210. Sophomore Year: (14 hours) Elective (3); Family & Child Studies 100, 200; Food & Nutrition 223; Natural Sciences (GER) (3). Junior Year: (21 hours) Family & Child Studies 277, 301, 320, 331, 341; Human Ecology Practica (3); Social Science (GER) (3). Senior Year: (23 hours) Family & Child Studies 361, 395, 400, 432, 451; Family & Child Studies Electives (6); Human Ecology Practica (3).

Nutrition and Dietetics

Programs in dietetics include an undergraduate didactic program, a post-baccalaureate internship, and a graduate program. The undergraduate didactic program provides learning experiences that enable students to master the knowledge requirements needed for entry-level practice. Mastery of course content in the didactic program and successful completion of the internship are required for meeting The American Dietetic Association eligibility requirements to write the Registration Examination for Dietitians. The internship and graduate programs are described in detail in the graduate program section of the University Bulletin. The Louisiana State Board of Examiners in Dietetics and Nutrition will disapprove the application for licensure if the applicant has been convicted of a felony.

The undergraduate didactic and internship programs are generalist programs. Graduates of these programs are prepared to assume positions in health care facilities such as hospitals and community health centers as well as management positions in food service systems.

Nutrition and Dietetics Curriculum (B.S.)

Freshman Year
Natural Sciences (GER)
Chemistry 120, 121, 122 7
English (GER) 6
Humanities (GER)
English 201 or 202 3
Social Sciences (GER)
Sociology 201 3
Family & Child Studies 201 3
Food & Nutrition Elective 3
Food & Nutrition 103 1
Mathematics (GER)
Mathematics 101 3

Merchandising & Consumer Studies 246 3

32

Sophomore Year
Accounting 101 or 201 3
Natural Sciences (GER)
Biological Sciences 225, 226, 227, 228 8
Food & Nutrition 203, 220, 232, 274 12
Merchandising & Consumer Studies 256 3
Social Sciences (GER)
Psychology 102 3

29

Junior Year
Biological Sciences 214 4
Humanities (GER)
English 303 3
Speech 110 or 377 3
Food & Nutrition 305, 402, 403, 404, 414 14
Management 310 3
Mathematics (GER)
Statistics 200 3

30

Senior Year
Arts (GER) 3
Food & Nutrition 302, 352, 412, 423, 443, 463, 472 21
Humanities (GER)
History 3
Human Ecology 398, 457 2
Social Sciences (GER)
Psychology 400 3

32

Total Semester Hours 123

(GER): General Education Requirements (pg. 29)

Dietetic Internship (DI)

The Dietetics Internship is described in the graduate section of the University Bulletin.

The Graduate Program

Master of Science Degrees offered by the School of Human Ecology are described in the graduate section of the University Bulletin.

Division of Nursing

The purpose of the Division of Nursing is to prepare graduates, with an Associate of Science Degree in Nursing, to function as beginning practitioners of nursing, thus affording unique benefits in meeting the health care needs of the community. The graduate will, also, upon completion of the prescribed program, be eligible to sit for the examination required for state licensure as registered nurses. **THE LOUISIANA STATE BOARD OF NURSING RESERVES THE RIGHT TO DENY A GRADUATE ADMISSION TO SIT FOR THE R.N. LICENSING EXAM IF HE/SHE HAS EVER BEEN ARRESTED, CHARGED WITH, CONVICTED OF, PLED GUILTY OR NO CONTEST TO, OR BEEN SENTENCED FOR ANY CRIMINAL OFFENSE.**

The Division of Nursing is approved by the Louisiana State Board of Nursing and accredited by the National League for Nursing Accreditation Commission.

Admission to the Division of Nursing is based upon the following criteria established by the Admission Committee, Division of Nursing:

- Acceptable scores on the ACT.
- Grade point average of 2.6 or better from high school or college.
- Three (3) Letters of Reference
- Evidence of LPN Licensure (if applicable)
- Pre-Nursing and Guidance examination (Given four times a year on Tech campus)
- COPS Interest Test
- Indication of emotion stability, character, personality, maturity, and interest in nursing as determined by a personal interview.

After the student has been accepted into the nursing program, an annual physical examination is required. A chest x-ray and Hepatitis B vaccine are required upon admission to the first nursing course along with current CPR certification. Students who hold or have held licensure in any health care discipline and who have or have had disciplinary action against such license; students who have ever been arrested, charged with, convicted of, pled guilty or no contest to, or been sentenced for any criminal offense; student who have habitually used or been diagnosed as addicted to drugs or alcohol; and students who have any physical or mental impairment which may affect their ability to practice safely as a registered nurse, shall petition the Louisiana Board of Nursing for review and action regarding their right to practice as student of nursing in Louisiana prior to entry into the first clinical course. Nursing students must be able to meet the Division of Nursing published *Core Performance Standards* (copy available in Nursing Office).

Applicants for readmission and transfer students must meet admission and progression criteria at the time of application. If more than 3 quarters have elapsed since the student was enrolled in a nursing course, an application to be readmitted must be approved by the Admission Committee.

All transfer students must provide a syllabus and course description for all courses for which transfer credit is desired. They must also submit a letter of reference from a faculty member of the school of nursing previously attended.

Nursing students must be covered by professional liability and accident insurance prior to registering for any nursing course.

In addition to the regular University fees, cost for uniforms, supplies, and equipment including books required in nursing program is approximately $600 annually.

Students must achieve a minimum grade of "C" in each nursing and nursing-related course to progress from one sequentially designed nursing course to the next. A nursing course may be repeated only one time.

Upon successful completion of all course requirements, the student is eligible for graduation with an Associate of Science Degree.

Nursing Curriculum (A.S.N.)

Freshman Year
Nursing 109, 110, 112, 114 15
Biological Sciences 214,225, 226, 227 11
Mathematics (GER) 3
English (GER) 3
Psychology 102 3
University Seminar 100** 1

36

Summer Quarter
Nursing 116 5

Sophomore Year
Nursing 210, 212, 214, 216 18
Psychology 408 3

Mathematics (GER) 3
English (GER) 3

27

Total Semester Hours 68

(GER): General Education Requirements (pg. 29)

Listed below are general academic course requirements for the Pre-Nursing course work. These courses meet core curriculum requirements for baccalaureate degrees in Louisiana. The student is advised to contact the school of nursing to which he/she will be transferring for any specific course requirements of that program.

Pre-Nursing

English (GER) 6
Mathematics (GER)
- Mathematics 101 or 111 3
- Statistics 200 3

Natural Sciences (GER)
- Biological Sciences 214, 225, 226, 227, 228 12
- Chemistry 120, 121 6

Arts (GER) 3
Humanities (GER)
- English 201 or 202 3
- History 201 and 202 or Foreign Language (above 100-level) 6
- Speech 110 3

Social Sciences (GER)
- Economics 215 3
- Psychology 102 3
- Sociology 201 3

Psychology 408, 418 6
Food & Nutrition 201 3

63

(GER): General Education Requirements (pg. 29)

After completing the above curriculum the student may transfer to a four-year nursing program to complete the requirements for the baccalaureate degree in nursing.

Accelerated (Extension) Program

The Division of Nursing provides an opportunity for licensed practical nurses that wish to pursue the Associate of Science Degree in Nursing through the Extension Program (Accelerated Learning) at Glenwood Regional Medical Center in West Monroe, Louisiana. Graduates in nursing from state-approved practical nurse educational programs who are currently licensed to practice, have had one year of clinical experience, and meet the admission criteria may be admitted.

After successful completion of Nursing 113, which is offered Spring Quarter only, the student is eligible for advanced placement in the nursing curriculum. An extension student who is unsuccessful in Nursing 113 may take Nursing 109, 110, and 112 on the Ruston campus. Subsequent failure in any one of these courses prohibits progression.

Concurrently, it is required that each student successfully completes 17 credit hours of required general academic courses. The total course work for Extension students follows.

Courses

University Seminar 100 (Sec. 90)**
(Prerequisite for Nursing 113) 1
Biological Sciences 214*, 225*, 226*, 227* 11
Psychology 102*, 408 6
Mathematics (GER) 6
English (GER) 6
Nursing 113, 114, 116, 210, 212, 214, 216 38

68

(GER): General Education Requirements (pg. 29)
*These courses are prerequisites for Nursing 114.
**Designed for Nursing majors and required in program of study

Students may transfer credit earned for the general academic courses from other accredited universities. A minimum grade of "C" is required for acceptance of transfer courses.

College of Education

Officers of Instruction

Dean
Jo Ann Dauzat
Assoiate Dean, Graduate Studies & Research Service
Cathy Stockton, Interim
Associate Dean, Undergraduate Studies & Director, Clinical Experiences
Connie C. LaBorde, Interim
Curriculum, Instruction, & Leadership
David E. Gullatt, Head
Health & Physical Education
James Heimdal, Head
Psychology & Behavioral Sciences
Tony Young, Head
A.E. Phillips Laboratory School
Carynn Wiggins, Interim Director

Accreditation

The College of Education, one of five colleges of Louisiana Tech University approved by the University of Louisiana System, is accredited by the Southern Association of Colleges and Schools and the Louisiana State Board of Elementary and Secondary Education. As an individual unit, it is a member of the American Association of Colleges for Teacher Education and of the American Association of Business Teachers. The College of Education is accredited by the National Council for the Accreditation of Teacher Education for the preparation of teachers at the undergraduate and advanced degree levels.

History and Organization

Since the founding of Louisiana Tech in 1894, the education of teachers has been a primary aim of the institution. The Laboratory School, A.E. Phillips School, was created by the Legislature in 1916. On November 12, 1925, the State Board of Education approved teacher education curricula, and on March 15, 1926, the State Board recognized the reorganization of these curricula. A Department of Education was recognized by the State Board in 1933, and in April of the following year, authorization was granted for the organization of a separate school. In July, 1970, the School was elevated to the level of a College of Education.

In 1948, physical education was transferred from the School of Arts and Sciences to the School of Education as a department. In 1955, the offerings in education were divided, forming Departments of Elementary and Secondary Education and the Department of Special Education. In 1965 the organization was expanded to include a Department of Psychology and Guidance, and in 1970 the Division of Research and Publications was established. In July, 1972, the State Board approved a reorganization of the College which created a Division of Research and Service and a Division of Curriculum and Instruction. In the Division of Curriculum and Instruction, three areas of instruction were created; teacher education which included all elementary and secondary programs, psychology and counseling, and health and physical education which included programs for men and women.

In July, 1975, the instructional program in special education was moved from Teacher Education to the area of Counseling and Psychology and the name of the area was changed to Behavioral Sciences.

In January of 1994 a new organization plan was approved and the Department of Curriculum, Instruction, and Leadership replaced the former Teacher Education area.

By actions of the State Board of Education on December 17, 1957, January 31, 1958, April 3, 1958, April 18, 1961, July 29, 1968, and February 19, 1974, authorization was given to grant the Master of Arts degree in Art Education, Elementary Education, English Education, Industrial/Organizational Psychology, Music Education, Social Studies Education, Special Education, and Vocational Guidance, and the Master of Science degree in Biology Education, Business Education, Chemistry Education, Mathematics Education, Physics Education, and Health and Physical Education. In April, 1967, the State Board of Education granted approval to offer the Specialist Degree, and on November 1, 1968, authority was granted to offer extension or off-campus courses. In 1994, authority was granted to offer the Ph.D. in Counseling Psychology and the Ed.D. in Curriculum and Instruction and Educational Leadership. (See Graduate Education section of catalog for graduate programs.)

Objectives

The College of Education is an integral part of Louisiana Tech University. From its founding in 1894, one of the purposes of the University has been the preparation of teachers. Undergraduate teacher education programs are developed and maintained through the joint activities of the faculty of the College of Education and the Louisiana Tech University Teacher Education Council. The College offers a full array of programs for the preparation of human services personnel as stated in its mission.

The mission of the College of Education is three-fold:

1. to provide high quality educational experiences for current and prospective professionals from baccalaureate through doctoral levels;
2. to enhance and extend the knowledge bases under girding professional programs through research and other scholarly activities;
3. to deliver professional services to the various business, civic, and educational communities through collaborative endeavors.

The mission is fostered through the following goals of the College of Education.

1. Continuously refine curriculum and instructional procedures ensuring the best research, theory, and professional practice in all programs.
2. Provide clinical and laboratory experiences enabling program graduates to function proficiently in diverse professional and cultural settings.
3. Enable program graduates to serve as change agents through implementation of innovative ideas, strategies, research, and technology.
4. Provide personal and professional development opportunities for students and faculty.
5. Encourage research and development initiatives designed to extend knowledge and solve problems in appropriate human service fields.
6. Promote faculty and student leadership in organizational service, publications, research, and other scholarly endeavors.
7. Design and deliver needs-based programs and services with appropriate constituencies.
8. Implement, evaluate, and refine plans to recruit and retain a diverse faculty and student body.

Division of Educational Research and Service

The Division of Educational Research and Service was created in 1970 to encourage and coordinate research activities in the College of Education and to provide assistance to local and state

education agencies. The Division cooperates with other research and service areas within and without the University.

The College of Education Research Advisory Committee, with the Director of the Research and Service Division serving as chair, recommends general policies and procedures for the Division. The Division is responsible to the Dean of the College of Education. Financial support for the activities of this Division is derived through the regular operating budget and special grants.

Scholarships

The following scholarships are available in the College of Education. For information concerning these scholarships, contact the Office of the Director of Clinical Experiences.

Mary Wilson Scholarship
- Pursue a teacher preparation program in Elementary Education
- Demonstrate a need for financial assistance
- Minimum high school GPA of 3.0
- Demonstrate a commitment to the teaching profession
- Awarded in the spring preceding award dates
- Maintain a GPA of 3.0 on all works to keep scholarship (may be continued)

College of Education General Scholarships
- (Number awarded varies each year)
- Pursue a degree offered through the College of Education
- Possess a strong ACT score and/or rank high in their graduating class
- Participate actively in a variety of high school activities

Lanette Southall Fisher Memorial Scholarship
- Sophomore education major
- Will receive on a continuing basis for three years unless program is completed earlier

Erma Flesher Memorial
- Enrolled in Social Studies Education curriculum Junior standing
- Possess a strong academic record

Estelle Harris Memorial Scholarship
- Elementary Education major
- Earned GPA of 3.0 on all course work completed
- Have an ACT of 23 or higher
- Awarded annually (may be a continuing student)

John Henry Milling Scholarship
- Junior or senior Education major
- Earned GPA of 3.0 on all college work completed
- Demonstrate financial need
- Recommended by a faculty member or administrator in the student's area of study
- Awarded as funds are available and as a need occurs

Mary Ann Smalling Scholarship
Kalil Scholarship
- Library Science major with overall GPA of 3.0
- Exhibits leadership in library activities such as Alpha Beta Alpha, campus activities, and community service
- Junior standing

Wilbur Bergeron Memorial Scholarship
- Enrolled in the College of Education
- Excellent academic record in high school and/or college

Enid Gladden Butler Scholarship (Graduate)
- Possess undergraduate degree from accredited college
- Active in professional organizations for teachers
- Recommended by teachers and administrators
- Active in community affairs
- Show evidence of effective classroom work
- Demonstrate need for financial assistance

Causey-Tanner Scholarship
- Enrolled in College of Education
- Demonstrate a commitment to the teaching profession
- Demonstrate a need for financial assistance
- Selected in the Spring preceding the effective date
- Satisfy the admission requirements of the College of Education
- May be from one to four years

John Cawthon Scholarship
- Enrolled in a teacher preparation program
- Demonstrate a need for financial assistance
- Have a minimum high school GPA of 3.0
- Selected in Spring preceding the effective date
- Demonstrate a commitment to the teaching profession
- Must maintain a GPA of 2.5 on all work pursued in order to retain scholarship

Mary Ross Higginbotham Scholarship
- Education major in the areas of Library Science, English, or Social Studies
- Show need for financial aid
- Junior standing and accepted into upper division
- Have a GPA of 3.0 or better

Linda Lou Allen Hudson Scholarship
- Junior of senior Elementary Education major
- College GPA or 3.0 and minimum ACT of 21
- Maintain GPA of 3.0 to retain scholarship
- Possess strong interpersonal skills as evidenced by participation in high school activities
- Registered as a full-time student in Elementary Education
- Meet with donors before final selection

Knots Memorial Scholarship
- Freshmen majoring in Physical Education
- Maintain a GPA of 2.5 over 3 quarters of one college year
- Maximum award of $500 per year
- American born citizen of U. S.
- Same student may receive continuously from Freshman year through Senior year
- Based on need as defined by the Financial Aid Office
- Recipient must within 15 days of notification of the receipt and before award, send his/her gratitude to donor

Pipes Memorial Scholarship
- Mathematics or Science Education major, Grades 4-8 or 7-12
- Freshmen applying should have an ACT score of 22 in mathematics or science, depending upon the content major
- Sophomores applying should have an overall GPA of 3.0 and a 3.5 in the specialty areas of mathematics or science
- Juniors applying should have an overall GPA of 3.2 and have passed PRAXIS I.
- Scholarship can be awarded to the same person on a yearly basis, but requires competitive application each year. Preference will be given to Louisiana applicants who have also passed PRAXIS content for the specialty area.

Admission and Retention

Admission and retention policy for the College of Education is established and administered by the College of Education Admission and Retention Committee. Students desiring to enter the College of Education must file an application obtained from the College of Education Associate Dean's office. Students applying must have at least a 2.0 grade point average on all college work earned.

Upon admission to the College of Education, each student will be assigned an advisor who will assist in planning a program of study. This advisor will be available for conferences during the academic year and must be consulted at each registration.

Students entering the College of Education from Basic and Career Studies will follow the curriculum in effect at the time of their admission to the University or the curriculum in effect at the time they enter the College of Education, unless changes are mandated by governing bodies.

Students entering the College of Education from other colleges on campus or transferring from other institutions must follow the curriculum in effect at the time they are admitted to the College of Education.

Students enrolled in the College of Education who change their major must follow the curriculum in effect at the time of the change. Any student who is not in attendance for four or more quarters (including summer quarter) must follow the curriculum in effect upon return to the institution.

Any student may choose to follow a newer curriculum so long as all requirements of the newer curriculum are fulfilled.

Students with a grade point average of less than 2.0 for 3 consecutive quarters will be dropped from the College of Education. Any student re-entering the College of Education after being suspended for academic, attendance, or disciplinary reasons must meet all entrance requirements and re-apply in writing to the Admission and Retention Committee. Appeal letters must be received in the office of the dean by the specified deadline.

Student Organizations in the College of Education

The college sponsors several student organizations that provide numerous opportunities for service, professional and leadership development, and social functions among student members and faculty. These organizations include the following:

- ABA - Alpha Beta Alpha - National Professional Fraternity for Library Science
- ACEI - Association for Childhood Education International
- CEC - Student Council for Exceptional Children
- Kappa Delta Pi - National Honor Society in Education
- LAE-SP- Louisiana Association of Educators-Student Program
- ESPE – Exercise Science and Physical Education
- Psi Chi - National Honor Society in Psychology
- Psychology Society

Upper Division (Teacher Education Programs)

Students pursuing degrees in teacher preparation curricula must apply and meet all admission requirements prior to enrolling in upper division classes.

After a student has earned or will have earned by the end of the current quarter a minimum of 46 semester hours of university credit in a teacher education program, the student may apply for program admission. Application forms are available in the Office of the Associate Dean for Undergraduate Studies. An application must be made by the end of the quarter prior to intent to pursue upper division courses and must provide evidence of meeting the following qualifications:

1. Applicant must have earned at least 46 semester hours of college or University credits which include the following courses or their equivalents: Education 125; English (9 semester hours), science (9 semester hours); mathematics (6 semester hours); social studies (9 semester hours); and Speech 110 or 377.
2. Applicant must have a grade point average of 2.2 on all hours attempted and an earned grade point average of 2.5, with a grade of at least "C" in Education 125, 310, English 101, 102; and Speech 110 or 377. Applicant must have a "C" average in content areas appropriate to the major.
3. Applicant must possess those physical, emotional, and mental characteristics necessary for effective classroom performance.
4. A speech and hearing test administered by the Louisiana Tech Department of Speech must be completed.
5. All students admitted to the College of Education (Upper Division) prior to September, 1999, must have successfully completed the Communications Skills and General Knowledge components of the National Teacher Examinations. After September 1999, students must present satisfactory scores on PRAXIS I (Reading, Writing, and Mathematics). Records indicating successful completion of these examinations must be presented at the time of admission (Act 836, 1984 Louisiana Legislature).
6. Any student on academic or disciplinary probation or suspension is not eligible for admission to Upper Division.
7. Any student seeking admission to Upper Division who has been convicted of a felony may be denied admission.
8. All students admitted to the College of Education (Upper Division) after September 1, 1997, must complete a Professional Portfolio that documents acquisition of Program Outcomes (Content Proficiency, Research-Based Teaching Competencies, and Professional Identity), Standards of the National Board for Professional Teaching Standards, and Interstate New Teacher Assessment and Support Consortium (INTASC) Model Standards by the end of the quarter in which they student teach.
9. Newly admitted students are required to attend an orientation meeting (TBA at the beginning of each quarter) for the purpose of reviewing programmatic matriculation.

The following guidelines shall be followed in calculating the GPA:

- No credit earned in developmental (remedial) courses shall be included in calculating the GPA.
- The GPA shall be calculated based on all credits earned at this University and any other university attended, including courses taken more than once.
- No grades of less than "C" may transfer to any teaching program.

There is no limit on the number of times a student may take the PRAXIS exam.

Based on its own rigorous assessment of the quality of applicants, each institution is permitted to admit an additional 10 % of the total number of students who qualify for admission each year. Admission under this regulation is for **one quarter only** and will not meet the upper division eligibility requirements for student teaching. Students wishing to be considered for admission under the 10% regulation must submit in addition to the application a letter requesting this admission status.

Deliberate falsification of the upper division application may result in the student being dropped from the College of Education. The application must be filled in completely, dated, signed by the student's advisor, and turned in to the Associate Dean's office **at least one week before the beginning of the quarter during which the applicant plans to register** for upper division courses.

Applicants may be asked to appear before the Admission and Retention Committee of the College of Education to explain or

defend their applications, to present additional information, or to demonstrate ability in certain areas.

Upper Division (Non-Certifying Programs)

Psychology and Health and Physical Education (Fitness/Wellness Management) majors may apply for upper division upon completion of 30 semester hours. An application must be made in which the student gives evidence of meeting the following qualifications:

1. Applicants must have earned 30 semester hours of university credits which include the following courses or their equivalents: English 101, 102; Mathematics 101; and Speech 110 or 377. Also, Health and Physical Education, Fitness/ Wellness Management majors must complete 18 semester hours of HPE courses including 3 different two-hour sport series courses. Psychology majors must complete 6 hours of Psychology including Psychology 102 or 202.
2. Applicants must have a grade point average of 2.0 on all hours earned with a grade of at least "C" in English 101, 102, Speech 110 or 377, and all courses in major area.

Deliberate falsification of the application may result in being dropped from the College of Education. The application must be filled in completely, dated, signed and turned into the Associate Dean's office one week before the beginning of the quarter during which the applicant will register for upper division courses.

Applicants may be asked to appear before the Admission and Retention Committee of the College of Education to explain or defend their applications, to present additional information, or to demonstrate ability in certain areas.

Degrees

Students who complete all requirements (including passing all required parts of the PRAXIS tests) of the teacher education curriculum within the College of Education are granted the bachelor's degree. Upon successful completion, students may apply for a teaching certificate from the State Department of Education to teach their specialties in the schools of Louisiana.

The degree of Bachelor of Science is awarded to students who finish curricula in elementary education, secondary education, health and physical education teacher certification, health and physical education fitness/wellness with a clinical or health concentration. Concentrations in secondary education leading to teacher certification include agriculture, business, English, mathematics, general science-biology, general science-chemistry, general science-earth science, general science-physics, social studies, and speech education. The degree of Bachelor of Arts is awarded to students completing curriculum requirements in art education, French education, music education, psychology, special education, and speech, language, and hearing therapy.

The Master of Arts degree is awarded in the following areas: counseling and guidance, industrial/organizational psychology, and educational psychology. The Master of Science degree is awarded in the following areas: curriculum and instruction, and health and physical education. The Master of Education degree (Fifth-Year Program) is awarded in the following areas: Agricultural Education, Art Education, Business Education, Elementary Education, English Education, Foreign Language Education, Health and Physical Education, Mathematics Education, Music Education, Science Education, Speech Education, and Social Studies Education.

The Ph.D. is awarded in Counseling Psychology, and the Ed.D. is awarded in both Curriculum and Instruction and Educational Leadership.

Louisiana Tech and Grambling State University offer a cooperative program in generic certification for Special Education. Frequent exchange of faculty enables each program to provide additional expertise and frequency of course offerings. Students are encouraged to take this opportunity to select needed course work from both universities to complete their program of study in Special Education.

Graduation Requirements

Students completing a degree program leading to Louisiana Teacher Certification must make a grade no lower than "C" in all specialized academic courses and in all professional courses. An earned grade point average of at least 2.5 and a cumulative GPA of 2.2 (on a scale of 4.0) are required for graduation.

In addition to completing the general graduation requirements of Louisiana Tech, students pursuing a degree program which leads to Louisiana teacher certification must post certifying scores on all required components of the PRAXIS Examination as a graduation requirement and to be eligible for certification.

Students completing a non-teacher certification degree program offered through the College of Education must earn a grade no lower than "C" in all specialized academic courses. A cumulative grade point average of 2.0 (on a 4.0 scale) is required for graduation.

Courses numbered less than 100 will not apply toward degree requirements in any curriculum.

State certification requirements do not permit the substitution of credit for ROTC and band for health and physical education activities requirements. Health and physical education activity credit accepted by the University for military service can be applied to satisfy this requirement, except in cases where a specific activity is required in a curriculum.

Correspondence courses and off-campus work which a student in the College of Education wishes to apply toward a degree must be approved by his/her advisor, the appropriate department head, and dean.

Fine Arts

The three semester hours of Fine Arts in each curriculum except elementary education shall be taken from the following: Art 290, Health and Physical Education 280, Music 290, or Speech 290. Elementary majors are required to take Art 301 and Music 334.

In compliance with the State of Louisiana Board of Regents, the College of Education is currently redesigning all levels (K-12) elementary and secondary teacher certification programs. For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information. New curricula will be published in the 2003-2004 Bulletin.

Guidelines for Clinical Experiences

Clinical experiences, both campus and field based, form an integral part of the various teacher preparation programs in the College of Education. Most professional courses require clinical experiences that will prepare the student for his or her own classroom in the future. All students are placed in public schools and are assigned by the Office of Clinical Experiences. Students are cautioned always to wear the identification while in a school, assuring a legitimate reason to be on a school site.

Clinical experiences are required in the various methods courses and are coordinated through the Office of Clinical Experiences.

A. External Clinical Experiences

A variety of clinical and field based experiences are provided through the College of Education. While the majority is course-

related, others are completed over an approximate two-year period. Early in their experience, education majors are apprised of clinical experiences designed to enhance their classroom preparation and readiness. Examples include attendance at professional seminars, visits to schools during the opening and closing of an academic year, and membership in professional organizations. Documentation of these activities should be placed in the Demographic Information section of the Professional Portfolio. The Director of Professional Laboratory Experiences will oversee these activities.

B. Practicum Experiences

During the early advisement period of the quarter immediately preceding enrollment in any practicum course, students must complete an application in the Office of Laboratory Experiences, Woodard Hall 111. Failure to do so will result in delay of placement and initiation of field experiences. All placements must be initiated by the Director of Laboratory Experiences.

C. Student Teaching/Internship

Student teaching/internship is the culminating activity in all teacher preparation programs. It requires placement in a school on an all-day basis (8:00 a.m. - 3:00 p.m. minimum) for an entire quarter and participation in all activities that are required of the cooperating teacher. Placement is restricted to public schools in a 9-parish area of north Louisiana. Ten systems that participate are: Bienville, Bossier, Caddo, Claiborne, Jackson, Lincoln, Monroe City, Ouachita, Union, and Webster.

Students apply for student teaching/internship during the early advisement period of the quarter immediately preceding the student teaching/internship quarter. Applications are available in the Office of Clinical Experiences, Woodard Hall 111. Failure to apply in a timely manner may result in a delay of placement.

The Board of Elementary and Secondary Education has set the requirement that a minimum of 270 clock hours will be spent in the classroom during student teaching. Of the 270 hours, 180 hours is spent in direct teaching activities with a significant portion of this time devoted to full-time teaching. This time requirement is met by beginning the student teaching/internship activity on the first day of class and continuing until the last day of class in the respective quarter. Additional specific requirements are found in the Student Teaching Handbook available in the University Bookstore.

No more than three semester hours may be taken with student teaching. All education courses should be completed prior to student teaching. Any course scheduled in addition to student teaching must not conflict with student teaching. The hours involved in student teaching will be approximately 8 a.m. to 3 p.m., Monday through Friday. No conventional grades or quality points are given. The final evaluation marking for student teaching is S-F (satisfactory or failure).

Prerequisites for student teaching are as follows:

General Prerequisites

1. Must be fully admitted to the teacher education program in the upper division of the College of Education.
2. Must have achieved a 2.2 GPA on cumulative hours pursued and a 2.5 GPA on hours earned.
3. Must be recommended for student teaching by faculty advisor, practica cooperating teacher, and approved by the Clinical Experiences Advisory Committee and the Director of Clinical Experiences.
4. All required professional education courses must be completed prior to student teaching.
5. Must have earned at least a "C" in any professional education or specialized academic education course. (both major and minor areas).
6. Must have completed all psychology courses, including SPED 300.
7. Must have completed all course work in major area.
8. If a student has a felony conviction record, he/she must first be approved for student teaching by the Clinical Experiences Advisory Committee.
9. Must have initiated a Professional Portfolio.
10. Must present evidence of having **passed** all required parts of the PRAXIS. Satisfactory scores on all parts of the exam are required for program completion.

Induction Year

The College of Education offers assistance to first-year teachers through an Induction Year Program. Each first-year teacher from Louisiana Tech University who is employed in the region is offered assistance in conjunction with the local school system.

Alternative Certification Program

The College of Education offers alternative programs for the certification of teachers. Additional information may be obtained by contacting the Office of the Associate Dean.

Programs in the following certification areas are pending approval for 2002-2003 implementation: P-3 (early childhood); 1-6; 4-8 (middle grades mathematics or science); 7-12 (in discipline areas of: Agricultural Education, Business Education, Elementary Education, English Education, Foreign Language Education, Mathematics Education, Science Education, Speech Education, and Social Studies Education; and Special Education—Mild/Moderate. For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information. New curricula will be published in the 2003-2004 Bulletin.

Department of Curriculum, Instruction, and Leadership

In compliance with the State of Louisiana Board of Regents, the College of Education is currently redesigning all levels (K-12) elementary and secondary teacher certification programs. For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information. New curricula will be posted in the 2003-2004 bulletin.

Secondary Education Curriculum (B.S.S.E.)

Under redesign at press time

For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information.

Previous Certification areas:

- Agricultural Education Certification
- Business Education Certification
- English Education Certification
- Mathematics Education Certification
- General Science-Biology Education Certification
- General Science-Chemistry Education Certification
- General Science-Earth Science Education Certification
- General Science-Physics Education Certification
- Social Studies Education Certification
- Speech Education Certification

Art Education Curriculum (B.A.A.E.)

Freshman Year
Art 115, 116, 125, 126, 220 15
Natural Sciences (GER)
  Biological Sciences 101, 102 6
English (GER) 6
Mathematics (GER)
  Mathematics 101 3
Health & Physical Education 2

32

Sophomore Year
Art 118, 266 6
Education 125 1
Special Education 300 3
Humanities (GER)
  English 201, 202 6
  History 201 3
  Speech 110 or 377 3
Health & Physical Education 150 2
Mathematics (GER)
  Mathematics 125 3
Social Sciences (GER)
  Psychology 204 3

30

Junior Year
Arts 267, 468, 473 9
Architecture 400 2
Education 450, 480 6
History 202 3
Natural Sciences (GER)
  Physical Science 3
Social Sciences (GER)
  Political Science 201 3
  Psychology 206 3
Science Elective 3

32

Senior Year
Art 240 or 241 3
Art History Elective 3
Education 401, 402, 403, 416, 463, 475 20
Social Sciences (GER) 3

29

Total Semester Hours 123
(GER): General Education Requirements

Elementary Education Curriculum (B.S.E.L.)

Under redesign at press time

For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information.

Previous Certification areas:

- Kindergarten Certification
- Library Science Certification

French Education Curriculum (B.A.F.E.)

Freshman Year
  English (GER) 6
Humanities (GER)
  English 201 3
  History 201, 202 6
  Speech 110 or 377 3
Mathematics (GER)
  Mathematics 101 3
French 101, 102, 201 9
Health & Physical Education 2

32

Sophomore Year
Natural Sciences (GER)
  Biological Sciences 101, 102 6
  Physical Sciences 3
Social Sciences (GER)
  Political Science 201 3
  Psychology 204 3
Arts (GER) 3
Mathematics (GER)
  Mathematics 125 3
Education 125 1
French 202, 301, 302 9

31

Junior Year
Computer Literacy (GER)
  Education 310 3
Humanities (GER)
  English 202 3
Social Sciences (GER) 3
Education 453, 480 6
French 304, 305 6
French Upper Division Electives 6
Psychology 206 3

30

Senior Year
Education 401, 402, 403, 416, 475 17
French 450, 470 6
Health & Physical Education 150 2
Biological or Physical Science Electives 3
Special Education 300 3

31

Total Semester Hours 124
(GER): General Education Requirements
As the scheduling of upper-division French courses is determined by changing enrollment patterns, students who plan to complete their degree within the shortest time possible may have to take one or more French

courses through the Inter-institutional Cooperative Program at Grambling University.

Music Education Curriculum (B.A.M.E.)

Freshman Year	Semester Hours
English (GER)	6
Mathematics (GER)	6
Natural Sciences (GER)	3
Humanities (GER)	
Speech 110 or 377	3
Music Applied, Private Lessons	3
Music Ensembles	3
Music Theory 101, 102	4
Music Pedagogy 372, 351 (I) or	
Music Applied, Classes & Recitals 233, 234 (V)	2
Music Applied, Classes & Recitals 100	0
Education 125	1
	31
Sophomore Year	
Natural Sciences (GER)	6
Humanities (GER)	
English 201 or 202	3
Social Sciences (GER)	3
Music Theory 103, 201, 202	6
Music Applied, Private Lessons	3
Music Ensembles	3
Music Pedagogy 371, 364 (I) or Music Pedagogy 311 (V)	2
Music History 304, 305	6
Music Pedagogy 300 &	
Music Applied, Classes & Recitals 232 (V) or	
Music Elective (I)	2
Music Pedagogy 331	1
Music Applied, Classes & Recitals 100	0
	35
Junior Year	
Humanities (GER)	
History 201 or 202	3
English	3
Social Sciences (GER)	3
Education 480	3
Music Technology 301	3
Music Applied, Private Lessons	3
Music Ensembles	3
Music Theory 203, 302, 330 (V) or 370 (I)	7
Music History & Literature	2
Music Pedagogy 300, 352	2
Music Applied, Classes & Recitals 100	0
Music Applied, Classes & Recitals 399	0
	32
Senior Year	
Social Sciences (GER)	3
Education 403, 416, 475	14
Psychology 408	3
Music Pedagogy 464, 465 (V) or 466 (I)	6
Music Pedagogy 301 (V) or 302 (I)	2
Music Pedagogy 363, 370, 381 (I) or Music Elective (V)	3
Music Ensembles	2
Music Applied, Classes & Recitals 100	0
	33
Total Semester Hours	131

(GER): General Education Requirements
(V) = Vocal Program
(I) = Instrumental Program

After completing the curriculum, the graduate will be eligible for certification from the State Department of Education to teach vocal and/or instrumental music in schools, depending upon the applied music elected. Upon entrance, the student will declare the particular certification desired.

For those desiring certification to teach music, the distribution of work taken in applied music must be in accordance with one or more of the plans listed above. The plan, or plans, pursued will be determined by individual desire for certification.

The curriculum for Vocal and Instrumental Certificate includes both Music 303 and 314, Education 465 and 466, and 20 additional music hours. Ensemble requirements for Music Majors listed under the College of Liberal Arts should be noted.

Speech, Language, & Hearing Therapy Curriculum (B.A.)

Freshman Year	
English (GER)	
English 201 or 202	6
Mathematics (GER)	
Mathematics 101	3
Natural Sciences (GER)	
Biological Sciences 101, 102	6
Health & Physical Education Activity	2
Speech 110, 202, 210, 222, 301, and 302	16
	36
Sophomore Year	
Humanities (GER)	
History 201, 202	6
Natural Sciences (GER)	
Physical Science	3
Social Sciences (GER)	
Political Science 201	3
Mathematics (GER)	
Mathematics 114	3
Education 125	1
Speech 411, 413, 418, 470	12
Psychology 204, 205	6
Biological Science 224	3
	37
Junior Year	
Social Sciences (GER)	3
Arts (GER)	3
Humanities (GER)	
English 332	3
Education 310, 423, 424	9
Psychology 206	3
Speech 312, 443	7
	28
Senior Year	
Counseling 400	3
Education 355, 401, 416, 475	15
Health & Physical Education 150	2
Psychology 414	3
Special Education 300, 495	6
	29
Total Semester Hours	130

Effective Fall Quarter 1985, all incoming Freshmen will have to obtain a Master's Degree in disorders of communication (Speech, language, hearing disorders and severe language disorders) in order to enter the work force as speech, language, and hearing specialists in the schools of Louisiana.

Department of Health & Physical Education

Health and Physical Education Curriculum (B.S.H.P.)
(Leads to Teacher Certification)

Freshman Year
English (GER) 6
Humanities (GER)
- English 201, 202 6
- History 201, 202 6
- Speech 110 or 377 3

Mathematics (GER)
- Mathematics 101, 125 6

Natural Sciences (GER)
- Biological Sciences 224 3

Education 125 1
Health & Physical Education 290 3

34

Sophomore Year
Natural Sciences (GER)
- Physics 205 3
- Physics 206 or Biological Sciences 130 3

Social Sciences (GER)
- Political Science 201 3
- Psychology 408 3

Computer Literacy (GER)
- Education 310 3

Health & Physical Education 202
- 251, 292 (H&PE Elective: Team/Lifetime Sport Series) 11

Health & Physical Education 293, 300, or 350 3
Elective (Certification Area) 3

32

Junior Year
Arts (GER)
- Health & Physical Education 280 3

Natural Science (GER)
- Physical or Biological Sciences 3

Social Sciences (GER) 3
Education 480, 403 6
Health & Physical Education 305, 326, 405 8
Health & Physical Education Team Sports Series 2
Health & Physical Education Lifetime Sports Series 2
Elective (Certification Area) 3

30

Senior Year
Education 401, 416, 475 12
Health & Physical Education 402, 408, 409, 414, 457 12
Health & Physical Education Electives 2
Electives (Certification Area) 3

29

Total Semester Hours 125
(GER): General Education Requirements

Health & Physical Education-Fitness / Wellness Curriculum
(B.S.H.P.) (Does not lead to Teacher Certification)

Freshman Year
- English (GER) 6

Arts (GER) 3
Health & Physical Education 202, 256 5
Health & Physical Education 290, 292, 300 (select two) 6
Mathematics (GER)
- Math 101 3

Directed Electives* 8

31

Sophomore Year
Humanities (GER)
- English 201 or 202 3
- History 3

Computer Literacy (GER)
- Merchandising & Consumer Studies 246, Agricultural Science 201, CIS 101 (select one) 3

Social Sciences (GER)
- Psychology 102 3

Directed Electives* ..... @19-20#

@31-32#

Junior Year
Health & Physical Education 326, 405, 406, 408, 409 12
Health & Physical Education 112 (select two section) 2
Humanities (GER)
- English 303 3
- Speech 110 or 377 3

Directed Electives* ..... @9-11#

@29-32#

Senior Year
Health & Physical Education 407, 410, 414, 415, 416, 418 21
Social Sciences (GER)
- Psychology 300 3

Directed Electives* ..... @9-7#

@33-31

@=Health Fitness Concentration 124
#=Clinical Concentration 125

No grade less than "C" is acceptable in English 101, 102 all Health & Physical Education major courses, Biological Sciences 224 or 225, and Speech 377. Varsity Athletics (HPE 114, 115, 116, 117) cannot be substituted for HPE activities.
(GER): General Education Requirements
*Directed Electives chosen by student in consultation with advisor from one of the following concentrations:

Clinical Concentration Directed Electives
Freshman Year: (8 hours): Natural Sciences (GER) - Biological Sciences 130, 131, 132, 133 (8).
Sophomore Year: (20 hours): (Mathematics (GER) - Mathematics 112 (3); Health & Physical Education 257 or 255 (2); Natural Sciences (GER) - Chemistry 100, 101, 102, 103, 104 (8); Biological Sciences 225, 226 (4); Social Sciences (GER) - (3).
Junior Year: (11 hours): Biological Sciences 227, 228, 315 (7); Physics 209, 261 (4).
Senior Year: (7 hours): Physics 210, 262 (4); Psychology 418 (3). This concentration includes all prerequisite course work required for Physical Therapy masters program.

Health Fitness Concentration Directed Electives
Freshman Year: (8 hours) Mathematics (GER) - Mathematics 125; Health & Physical Education 150; Health Information Management 103.
Sophomore Year: (19 hours): Social Sciences (GER) - Economics 215 (3); Health & Physical Education 257, 265, 266, 267 (choose one) (2); Management 201 or 340 (3); Natural Sciences (GER) - Biological Sciences 224 plus (6) additional hours to meet (GER) sequence requirement; Health & Physical Education 255 (2).
Junior Year: (9 hours): Accounting or 201 (3); Food & Nutrition 253 (3); Elective (3).
Senior Year: (9 hours): Health & Physical Education 316 (3); Management 310 (3); Marketing 300 (3).

Requirements for a Minor in Fitness/Wellness
(For non-Physical Education majors: 22 hours) The following courses are required: Health & Physical Education 202 (3), 256 (2), 326 (3), 405 (2), 407 (3), 408 (3), 409 (1), and two restricted elective courses. Restricted Elective 1: (choose from) Health & Physical Education 316 (3), 406 (3), 410 (3), 414 (3), 416 (3), or Food & Nutrition 253. Restricted Elective 2: (choose from) Health & Physical Education 255 (2) or 257 (2). All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Health Education
(For non-Physical Education majors: 23 hours) The courses in the Health Education minor certifies one to teach health education when taken with any major in a teaching certifying curriculum. HPE 150, 290, 292, 305 (11 hrs.) And 12 hours from the following classes - six of which must be from 300- or 400-level courses: Biological Science 224, Food & Nutrition 203, 300, Health & Physical Education 292, 293, 300, 350, 408. All courses

applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Physical Education

(For Teacher Education majors: 25-26 hours) The Physical Education minor certifies one to teach physical education when taken with any major in a teaching certifying curriculum. The following courses are required: Health & Physical Education 202, 251, 326, 405, 408, and 457; one of the following Health & Physical Education 255, 256, or 257; one of the following Health & Physical Education 265, 266, 267; and any two of the following Health & Physical Education 414, one Lifetime Sport Series course, one Team Sport Series course, and up to two Coaching Techniques classes. All courses applied toward the minor must be completed with the grade of "C" or higher.

Department of Psychology & Behavioral Sciences

Psychology Curriculum (B.A.)
(Does not lead to Teacher Certification.)

Freshman Year
- English (GER) 6

Humanities (GER)
- History 101 or 201 3
- Speech 110 3

Mathematics (GER)
- Mathematics 101 and 111, or 111 and 112 6

Natural Sciences (GER)
- Biological Sciences 130, 131 4

Psychology 102, 202 6
Health & Physical Education 2

30

Sophomore Year
Humanities (GER)
- English 201 or 202 3
- English 303 or Journalism 101 3
- History 102 or 202 3

Natural Sciences (GER)
- Biological Sciences 224 3

Psychology 300, 301, 304, 310 12
Health & Physical Education 2
Social Sciences (GER) 6

32

Junior Year
Arts (GER) 3
Psychology 302, 307, 312, 321, 461 15
Psychology Electives* 6
Electives 9

33

Senior Year
Natural Sciences (GER)
- Physical Science 3

Psychology 407, 408, 418 9
Psychology Electives* 9
Electives 6

27

Exit Examination 0

Total Semester Hours 122

(GER): General Education Requirements
*May include 3 hours of Counseling or 3 hours of Special Education, 9 hours at the 400-level or above.

Requirements for a Minor in Psychology
Requirements for a Minor in Psychology include 21 hours of Psychology courses consisting of the following: PSYC 102, 202, 300, two additional 300-level and two 400-level PSYC courses. All courses applied toward the minor must be completed with the grade of "C" or higher.

College of Engineering and Science

Officers of Instruction

Dean
Leslie K. Guice
Interim Associate Dean, Research and Graduate Studies
Balachandran Ramachandran
Associate Dean, Undergraduate Studies
James D. Nelson
Biomedical Engineering
Stanley A. Napper, Academic Director
Steven Jones, Program Chair
Chemical Engineering,
Bill Elmore, Academic Director
Bill Elmore, Program Chair
Chemistry
Balachandran Ramachandran, Academic Director
Dale Snow, Program Chair
Civil Engineering
Bill Elmore, Academic Director
Freddy Roberts, Program Chair
Computer Science
Jenna P. Carpenter, Academic Director
Vir Phoha, Program Chair
Construction Engineering Technology
Bill Elmore, Academic Director
Paul Hadala, Program Chair
Electrical Engineering
Jenna Carpenter, Academic Director
Dave Cowling, Program Chair
Electrical Engineering Technology
Jenna Carpenter, Academic Director
Bill Ray, Program Chair
Geosciences
Bill Elmore, Academic Director
Gary Zumwalt, Program Chair
Industrial Engineering
Stanley A. Napper, Academic Director
Jun-Ing Ker, Program Chair
Mathematics and Statistics
E. Eugene Callens, Jr., Academic Director
George Butler, Program Chair
Mechanical Engineering
Stanley A. Napper, Academic Director
Bill Jordan, Program Chair
Physics
Balachandran Ramachandran, Academic Director
Lee Sawyer, Program Chair
Minority Engineering and Cooperative Education Programs
Leona Ford, Director

History and Organization

Engineering education at Louisiana Tech University began in 1895 with a two-year program in Mechanic Arts. In 1910 this program was expanded to a Bachelor of Industry degree in General Engineering. Four-year engineering curricula developed as follows: 1921-BS in General Engineering; 1927-BS in Mechanical-Electrical and BS in Civil Engineering; 1938-BS in Mechanical and separate BS in Electrical Engineering; 1940-BS in Chemical Engineering; 1948-BS in Petroleum Engineering; 1957-BS in Industrial Engineering; 1972-BS in Biomedical Engineering; and 1986-BS in Computer Engineering.

Other bachelors degrees developed as follows: 1953-Geology; 1968-Construction Engineering Technology; 1968-Computer Science; and 1972-Electrical Engineering Technology.

Graduate education began in 1958 with the Master of Science degree (Engineering and Geology). In 1968 the Ph.D. degree in Engineering was offered. In 1973 the Ph. D. in Biomedical Engineering was offered. In 1979 the practice-oriented Doctor of Engineering was offered. In 1980 the Master of Science in Computer Science was offered. In 1996 the School of Science which included mathematics, chemistry, and physics, was merged with the College of Engineering to form the College of Engineering and Science.

In 1998, the Ph.D. in Engineering was approved and began enrolling students.

The vision, mission, and guiding principles for the College of Engineering & Science are as follows:

The Vision

We will be the college of choice in this region for students in engineering and science.

The Mission

- We provide a quality undergraduate and graduate education that responds to the needs and challenges of our ever-changing world, includes an international perspective, and stimulates social and ecological awareness.
- We promote the knowledge, skills, ethics, creativity and critical thinking necessary for professional competence and life-long learning.
- We conduct quality research throughout the college and world-class research in key focal areas.

Guiding Principles

- We consider the success of our students to be the primary standard for our success.
- We will provide an exciting environment that allows all students, faculty, and staff to attain their maximum potential.
- We will exhibit integrity, respect, and dignity in every aspect of our conduct.
- We will instill a spirit of pride, cooperation, and accountability in all that we do.
- We believe that teaching, research, and professional service are mutually supportive in the search for excellence.

Accreditation

All engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), and both four-year engineering technology programs are accredited by the Technology Accreditation Commission of ABET. The Computer Science program is accredited by the Computer Science Accreditation Commission (CSAC) of the Computing Sciences Accreditation Board (CSAB), a specialized accrediting body recognized by the Council on Post Secondary Accreditation (COPA) and the U. S. Department of Education.

Undergraduate Degrees

Bachelor of Science degrees are offered in biomedical engineering, chemical engineering, chemistry, civil engineering, computer science, construction engineering technology, electrical engineering, electrical engineering technology, geology, industrial engineering, mathematics, mechanical engineering, and physics.

High School Preparation

The best high school preparation for a student planning to enroll in a curriculum offered by the College of Engineering and Science is listed below:

English, 4 units; Algebra, 2; Plane Geometry, 1; Trigonometry, 1; Chemistry, 1; and Physics, 1.

Dual Bachelor of Science Degrees with Grambling State University

Students at Louisiana Tech University and Grambling State University have the opportunity of simultaneously pursuing two Bachelor of Science degree programs, one at Tech and one at Grambling. Grambling's B.S. degree in Drafting Technology is coordinated with Tech's B.S. degree in Civil Engineering. Grambling's B.S. degree in Electronics Technology is coordinated with Tech's B.S. degree in Electrical Engineering.

A student who wishes to enroll for either of these dual programs may do so by declaring his/her intention when applying for admission. Transfer students are allowed to enter these programs at any registration at either of the universities.

To qualify for a B.S. degree at Grambling and a B.S. degree at Tech, a student must complete all courses required by the Department of Industrial Education at Grambling and the courses required by the appropriate engineering department at Tech. Courses that are common to both degree programs and that are offered at both universities may be taken at either university.

Admissions

Students who meet the University admissions criteria will be admitted to the College of Engineering and Science.

International Students

International students will be subject to the same admission requirements as other students. However, no baccalaureate program in the College of Engineering and Science will permit its enrollment of international students to become larger than 15% of the program's total enrollment in the previous Fall Quarter. When international applicants exceed this limit, they will be selected for admission competitively on the basis of scholastic achievement.

Transfer Students

Candidates for admission to the College of Engineering and Science who have studied at another institution of higher education must submit an official record of that study to Louisiana Tech University. This record will be evaluated by the program in which the candidate wishes to major. The evaluation will determine which curricular requirements of the intended program of study at Louisiana Tech have been satisfied by the student's prior study. Students must have an overall grade point average of at least 2.0 out of 4.0 in all courses for which transfer credit is allowed.

Scholastic Requirements

Students in the College of Engineering and Science are subject to the scholastic standards of the University regarding probation, suspension, and readmission. Program chairs may approve workload restrictions intended to restore the quality of the student's work to the standards required by the College of Engineering and Science.

Students in the College of Engineering and Science must earn a grade of "C" or better in any math course which is a prerequisite for other courses. Students must also earn a grade of "C" or better in ENGR 120, 121, 122; CHEM 100, 101, 103; and PHYS 201 prior to taking courses for which these are prerequisites.

Students on scholastic probation and those returning from a period of suspension are limited to a maximum of 9 semester hours per quarter.

Electives

All electives must be approved by the appropriate program chair.

Credit by Examination

Students of exceptional scholastic achievement are allowed to take subject credit examinations in some of the courses required for a degree. The University has specific regulations controlling subject examinations, and these regulations are printed elsewhere in this Bulletin. A student in the College of Engineering and Science may earn up to a maximum of 30 semester hours by credit examination. The College of Engineering and Science will not accept any credits earned by passing the CLEP General Examination.

Correspondence Courses

Students in the College of Engineering and Science are permitted to include no more than six semester credit hours of correspondence courses for credit toward graduation in any curriculum. Prior to pursuing the correspondence work, the student must obtain written approval of the Associate Dean for Undergraduate Studies of the College of Engineering and Science. Approval will be granted only for courses in humanities or social sciences. (All English courses are excluded.)

Graduation Requirements

All requirements listed in the General Information section of this Bulletin apply. In addition, a student majoring in a program in the College of Engineering and Science must have at least a 2.0 grade point average in courses bearing the specific rubric of the major program (e.g., computer science, civil engineering). In order to graduate from a baccalaureate program in the College of Engineering and Science, a student must complete 27 of the last 36 hours in the curriculum while enrolled in the College of Engineering and Science.

Ethical Standards

Students in the College of Engineering and Science are preparing to enter a profession which demands high ethical standards of its members. Honesty and high ethical standards are demanded of these students and all others taking courses conducted in the College of Engineering and Science. It is the student's right and responsibility to discourage and report academic misconduct. The failure to do so is a breach of ethical standards.

Academic misconduct is a serious breach of ethics in academic activities, such as examinations, reports, and homework. It may occur in any of the following forms:

1. Giving or receiving unauthorized aid;
2. Stealing or plagiarizing the substance, work, or ideas of others;
3. Lying, using evasive statements, or concealing the truth behind technicalities.

Student-written computer programs and data are not to be shared with other students without the specific authorization of the responsible faculty. Students are responsible for protecting their disks from unauthorized access.

The determination of academic misconduct will be made in accordance with the University's "Academic Misconduct" section of this Bulletin.

Repeated occurrences of academic misconduct are specifically contrary to the standards of personal integrity required by the professions connected with the programs in the College of Engineering and Science. Therefore, a stronger penalty may be awarded for repeated commissions of academic misconduct, including dismissal from the College of Engineering and Science.

Undergraduate Research Opportunities

Academically qualified undergraduate students have an opportunity to gain experience on campus by working part-time as

a member of a research team including faculty and graduate students. Compensation is competitive with most local employment and entails the major advantage of providing on-campus stimulating work experience to enrich the student's total educational experience.

The qualifications required for participating include the following:

1. Students must be enrolled in a degree program in the College of Engineering and Science, and must be in good academic standing.
2. Students must have an overall grade point average of 2.7 or better.

Students are selected by the faculty responsible for the various research projects offering the employment.

Applicants will automatically be considered for suitable employment on research projects throughout the college regardless of the department in which they are enrolled.

The Cooperative Education Program

The College of Engineering and Science is cooperating with certain industrial firms in a plan of alternate periods of work and University study for students in engineering and science. The Cooperative Education Program provides one of the best methods for integrating technical theory and practical industrial experience.

Although the College of Engineering and Science cannot guarantee work or stipulate compensation, an effort will be made to place the students in jobs having the most favorable education and financial possibilities. The Cooperative Education Program will allow the student to have approximately one year of practical experience by the time of graduation. If the student accepts permanent employment with the cooperating company, the necessity for taking special company orientation and training courses after graduation is usually eliminated. The Cooperative Education Program does not obligate the graduate to accept employment with the cooperating company, nor does it obligate the company to offer permanent employment to the graduate.

Each student participating in the Cooperative Education Program is required to register at Louisiana Tech during each work period.

Students from any academic program within the College of Engineering and Science will be considered for participation in the Cooperative Education Program provided they have successfully completed 45 semester credit hours of University work with a grade point average of at least 2.7. Requirements for graduation and the degree earned are the same as those for regular students. Individuals interested in further details should contact the Director of the Cooperative Education Program, College of Engineering and Science, Louisiana Tech University, Ruston, LA 71272.

Student Organizations

The following national organizations have student chapters on campus: American Chemical Society, Biomedical Engineering Society, American Institute of Chemical Engineers, American Society of Civil Engineers, Association for Computing Machinery, Institute of Electrical and Electronics Engineers, Instrument Society of America, Institute of Industrial Engineers, American Society of Mechanical Engineers, Associated General Contractors of America, Institute of Transportation Engineers, Association of Electrical Engineering Technologists, Society of Automotive Engineers, North American Society for Trenchless Technology, National Society of Black Engineers, Society of Physics Students, Society of Women Engineers, American Society of Heating, Refrigeration, and Air Conditioning Engineers.

Student Honor Societies

The following honor societies are available to those students who excel academically and are elected to membership:

- All Engineering--Tau Beta Pi
- All Technology--Tau Alpha Pi
- Biomedical Engineering--Alpha Eta Mu Beta
- Chemical Engineering--Omega Chi Epsilon
- Civil Engineering--Chi Epsilon
- Computer Science--Upsilon Pi Epsilon
- Electrical Engineering--Eta Kappa Nu
- Industrial Engineering--Alpha Pi Mu
- Mathematics--Pi Mu Epsilon
- Mechanical Engineering--Pi Tau Sigma
- Physics--Sigma Pi Sigma

Engineering and Science Scholarships

The scholarships listed under this section of the catalog are administered by the College of Engineering and Science and its individual programs. All scholarships are dependent on availability of funding and subject to cancellation or modification by the sponsor.

Butros Aukar Memorial Scholarship

A $300 scholarship is provided for an outstanding student majoring in mechanical engineering or industrial engineering.

Associated General Contractors of America Scholarships

A $1,000 scholarship is made available by the Louisiana Highway, Heavy, Municipal, and Utilities Branch of AGC to a student majoring in construction engineering technology. Students in construction engineering technology may also apply for scholarships through the AGC Shreveport Chapter and the National AGC, the Associated Builders and Contractors, Inc., and the Software Shops Systems.

David Michael Baker-Puffer Sweiven, Inc. Memorial Scholarships

One or more scholarships at $1000 each are awarded to outstanding students majoring in chemical engineering at any level.

Ben T. Bogard Scholarship

Scholarships awarded as availability of funds permit to outstanding engineering students who have completed at least 6 quarters and 92 semester credit hours at Louisiana Tech, but have at least 3 quarters remaining before graduation. The award is based on scholarship, character, leadership, and need.

Frank Bogard Scholarship

Scholarships awarded as availability of funds permit to engineering students having completed at least 3 quarters and 60 semester credit hours at Louisiana Tech, but not more than 91 semester credit hours at the beginning of the Fall Quarter. The award is based on scholarship, character, leadership, and need.

Robert V. Byrd Scholarship

Scholarships awarded as availability of funds permit to engineering students maintaining a grade point average of 3.0 or better.

Ronald E. Cannon Endowed Scholarship

Scholarships awarded based on academic excellence to students pursuing a degree in an engineering discipline applicable to the natural gas and gas processing industry.

Chemical Engineering Scholarships

Scholarships are available to sophomore, junior, and senior students. Recipients are chosen on the basis of need, scholarship, and leadership. Participating companies include Dow Chemical, Exxon, PPG Industries, Union Carbide, UOP, Chevron, Ethyl, Monsanto, Copolymers, and Fluor Daniels. Scholarships are usually $600 per year.

Chevron Scholarship

Two $1000 scholarships are awarded to junior or senior students majoring in mechanical engineering. Recipients must be U. S. citizens or holders of permanent resident visas.

Civil Engineering Scholarships

Scholarships are available to sophomores, juniors, and seniors in civil engineering. Recipients are chosen based on academic ability, extracurricular activities, leadership potential, and financial need. Scholarship amounts vary.

Loyd Ray Click Memorial Scholarship

The Shreveport Chapter of the Construction Specifications Institute awards an annual $500 scholarship to a sophomore, junior, or senior student majoring in architecture, interior design, landscaping, civil, mechanical, or electrical engineering, or construction engineering technology. The award is based upon academic excellence, financial need, and character. The Selection Board is composed of an Architectural Department faculty member, an Engineering Department faculty member, and a member of the Shreveport CSI Chapter.

Edward C. Darling Endowed Memorial Scholarship

A scholarship is awarded as availability of funds permit to a civil engineering student registered full-time with a minimum 3.0 GPA.

Desk and Derrick Club Scholarship

An annual scholarship is provided for a student majoring in geosciences.

Dow Chemical Outstanding Junior Chemical Engineering Award

A $1,000 award is given to the top junior in chemical engineering. The recipient is chosen on the basis of scholarship and leadership. Selection is made by the Student Chapter AIChE officers and chemical engineering faculty.

Charlie Earl Scholarship

A scholarship is awarded as availability of funds permit a student majoring in mechanical engineering with particular preference being given to those who are married.

Eastman Minority Scholarships

Scholarships in the amount of 100 percent of tuition and fees are awarded to sophomore, junior, and senior minority engineering students. Preference is given to those who rank in the upper 25 % of their class. The award may be continued through the senior year.

Eastman Scholars Award

Scholarships based on academic excellence includes $4000 awarded to a junior in chemical engineering for senior year expenses, together with a summer internship at Eastman. The students must be a U. S. citizen and rank in the top 10% of their class.

Engineering Alumni Scholarships

Derived from contributions by engineering alumni and their employers, scholarships are awarded each Fall to incoming freshmen students in the College of Engineering and Science. These awards are based on ACT and National Merit scores and high school records. The student must maintain a grade point average of 3.0 and remain in good standing in the College of Engineering and Science.

Oliver Woodrow Fisher Memorial Scholarships

Scholarships in the amount of $1,000 each are awarded annually to students majoring in construction engineering technology, electrical engineering, and mechanical engineering.

Ben F. Freasier Memorial Scholarship

The Ben F. Freasier Memorial Scholarship is awarded by the College of Engineering and Science, chemistry program, to a junior or senior chemistry major. Special consideration will be given to a student whose interests include using the latest computer technology in conjunction with the science of chemistry, especially in monitoring and/or controlling chemistry laboratory experiments.

The award was established by the family and friends of the late Dr. Ben F. Freasier who taught chemistry for over twenty years at Louisiana Tech University. He was a visionary in the field of computer technology.

Buford Echols Gatewood Scholarship

A scholarship is awarded as availability of funds permit to a student majoring in mechanical engineering. Recipient must maintain a 2.5 or better grade point average.

Thomas Harper Goodgame Scholarship

A scholarship is awarded to a student enrolled in a curriculum in the College of Engineering and Science with a minimum 2.5 grade point average.

J. R. Harrelson Memorial Engineering Scholarship

Scholarship awarded as availability of funds permit to an incoming freshman who is a graduate of Woodlawn High School in Shreveport, LA with a minimum GPA of a 3.0 and accepted into the College of Engineering and Science. This scholarship is available for four years. Student must maintain a 2.75 GPA.

Mendal Heller Memorial Scholarship

A $400 scholarship is provided by the Ark-La-Tex Section of ASME for an outstanding student majoring in mechanical engineering.

Mark David Hill Scholarship

Scholarship awarded to an outstanding student majoring in mechanical engineering.

David E. Hogan Endowed Scholarship

Scholarships awarded based on academic excellence to students pursuing a degree in an engineering discipline and demonstration of financial need.

John R. Horton Scholarship

Scholarship awarded to an outstanding student majoring in mechanical engineering.

Kaiser Aluminum Company Minority Scholarships

Approximately $6,000 in scholarships are awarded each year for minority and women students majoring in chemical engineering and mechanical engineering. The number and amount of scholarships are determined by the faculty in the individual departments. Awards are renewable and are based on need and academic standing.

Thomas E. Landrum Memorial Scholarship

One scholarship is given to the outstanding senior in biomedical engineering.

Lazenby and Associates Scholarship
A $1,500 scholarship is given each year to a student in civil engineering. The recipient is selected based on academic ability, extracurricular activities, leadership potential, and financial need.

McDermott Incorporated Scholarships
Two $1,000 scholarships are provided for a junior and a senior majoring in civil engineering.

Robert E. McFadden Endowed Scholarship
Scholarships awarded as availability of funds permit to an incoming freshman admitted to the College of Engineering and Science who is a graduate of Captain Shreve High School in Shreveport, LA. Award will be based on financial need, teacher recommendations, college entrance test scores and minimum GPA of 2.5. (With growth in the principal, the decision *may* be made in the future to continue the scholarship into the sophomore, junior and senior years. If so, the student must maintain a 2.5 GPA.)

R. A. McFarland Memorial Scholarship
A scholarship is awarded as availability of funds permit to a civil engineering student who has been at Louisiana Tech for at least 2 years but has at least 3 quarters remaining before graduation. The recipient should rank in the upper one-fourth of his/her class among civil engineering students.

ME/IE Scholarship
Scholarship awarded to outstanding student majoring in mechanical or industrial engineering.

Mercedes Benz Scholarship
Two $750 scholarships are awarded to students majoring in mechanical engineering.

Pipes Foundation Scholarship
Scholarships awarded to students pursing a degree in an engineering discipline who maintain a 3.0 or better grade point average.

H. E. Ruff Physics Scholarship
Each year four scholarships of $1200 each are awarded to freshmen physics majors. The scholarships are made possible through gifts from alumni and friends in honor of Dr. H. E. Ruff, former physics department head.

Donald Ruffin Endowed Scholarship
Scholarship will be awarded to a graduate of Oak Grove High School (LA) who is majoring in a curriculum in the College of Engineering and Science. Recipient must maintain a 2.5 GPA.

Maryanne Scogin Memorial Scholarship
Scholarship awarded as availability of funds permit to a student with a 3.0 GPA enrolled in Chemical or Mechanical Engineering.

Roy T. Sessums Memorial Scholarships
Four scholarships in the amount of $1,000 are awarded each year on a stated rotation to two freshman and two graduate students majoring in civil, electrical, or mechanical engineering. Scholarships are awarded on the basis of scholarship, character, and leadership. The awards for underclassmen may be continued if the students remain enrolled in their chosen discipline of study and maintain a grade point average of 3.0 or better.

Dr. and Mrs. P. K. Smith, Sr. Endowed Scholarship Fund
Recipient shall be a junior majoring in a mathematics curriculum. Preference is that the award be to a graduate of a high school in Lincoln Parish.

Harrell R. and Lenore S. Smith Scholarship
Scholarships awarded as availability of funds permit to students chosen by the College of Engineering and Science Awards and Scholarships Committee.

Henry E. & Margaret A. Stamm Scholarship
Scholarships awarded based on academic excellence and demonstration of financial need.

Harry Talbot Scholarship
Scholarships awarded as availability of funds permit to engineering students with a grade point average of 3.0 or better who are U.S. citizens.

Jack Thigpen Scholarships
Approximately $2,000 in scholarships are awarded each year to outstanding students in mechanical engineering. The number and amount of awards are determined by the mechanical engineering faculty.

Cengiz Topakoglu Outstanding Biomedical Engineering Student Scholarship
A $1000 scholarship is awarded in the Fall to the outstanding student in biomedical engineering, based on contributions to the program and potential for contributions to the field. The selection is made by a committee of faculty and alumni.

Bruce Tucker Memorial Scholarship
A $1,000 scholarship is awarded annually to a student majoring in construction engineering technology.

Charles G. Tullis Scholarship
A scholarship awarded to a student enrolled in a major in an area of Engineering in the College of Engineering and Science with a 2.0 grade point average.

Roy Wayne Vining-Dow Chemical Company Memorial Scholarship
Two or more $1000 scholarships are awarded to outstanding chemical engineering students at any level, subject to renewal.

Calvin Watts Scholarship
A scholarship is awarded as availability of funds permit to a civil engineering student who has been at Louisiana Tech for at least two years. The recipient should rank in the upper one-fourth of his/her class among civil engineering students.

Whetstone Scholarships
A $1,000 and a $900 scholarship, sponsored by the R. Terral Whetstone family of Shreveport, are available to mechanical engineering students.

C. C. Whittelsey Scholarship
Scholarships awarded as availability of funds permit to students majoring in an engineering curriculum.

Thomas J. and Elizabeth B. Wilson Scholarship
Scholarships awarded as availability of funds permit to engineering students maintaining a grade point average of 2.5 or better. The award is based primarily on need with scholarship, character, and leadership being secondary considerations.

Samuel McCain Young Memorial Scholarship

An approximately $750 scholarship is awarded each year by the Louisiana Engineering Society Ladies Auxiliary of New Orleans to a civil engineering student from the New Orleans metropolitan area. The award is based on need and academic record.

Engineering and Science Graduate Studies

The College of Engineering and Science offers the Master of Science with curricula available in biomedical, chemical, civil, electrical, industrial, and mechanical. The Master of Science is offered in computer science, chemistry, mathematics, and physics.

The Doctor of Philosophy degree is offered in applied computational analysis and modeling, in biomedical engineering, and in engineering (an interdisciplinary degree).

For information about graduate studies, see details in the graduate portion of this Bulletin, or contact the Associate Dean for Graduate Studies, College of Engineering and Science, Louisiana Tech University, Ruston, LA 71272.

Division of Continuing Engineering and Science Education

The Division of Continuing Engineering and Science Education sponsors and coordinates various special programs other than the regular academic and research programs. These include conferences, short courses, lectures, seminars, and continuing education programs. These programs are designed to aid practicing engineers, technicians, and others to keep abreast of the latest developments in the rapidly expanding technical fields. Some are offered regularly on a periodic basis while others are offered on demand. Anyone desiring the offering of any special course should contact the Director of Continuing Education, Louisiana Tech University, Ruston, LA 71272.

Undergraduate Programs

Biomedical Engineering

Biomedical engineering is formally defined as the application of engineering skills, principles, and tools to problems in biology and medicine. The undergraduate program at Louisiana Tech University combines the practical aspects of engineering with biology and medicine to produce an engineer capable of solving special kinds of problems. Biomedical engineers are alert and sensitive to the challenges of designing and using products for living systems and of studying these systems. The program provides medical and biological instruction in typical premedical courses (e.g., general biology, anatomy, physiology, organic chemistry) and engineering instruction in fundamental engineering courses. The biological training is integrated with the engineering training by means of a series of coordinated biomedical engineering courses taught at the sophomore, junior, and senior academic levels. In order to provide depth and focus in technical abilities, students specialize in one of the following traditional areas: chemical engineering, electrical engineering, or mechanical engineering. A separate track is available for pre-medical students.

Internships are available in both clinical and industrial environments. Interns experience breadth of interactions, procedures, and technology, and they complete significant engineering projects.

Biomedical engineers are working in many rewarding areas: for example, design and construction of artificial internal organs; design and application of the electronics and instrumentation associated with hospital operating rooms, intensive care units, and automated clinical laboratories; development and instrumentation of biomedical computer systems; the functional rehabilitation of disabled persons through appropriate application and development of technology; clinical engineering; aerospace medicine and life science; basic research using engineering analysis principles aimed at understanding the basic mechanisms that regulate the human body. Employment opportunities for biomedical engineers exist in hospitals, rehabilitation engineering centers, national research foundations, governmental research institutions and agencies (e.g., NASA, FDA), chemical companies, pharmaceutical companies, hospital products companies, medical instrumentation and computer companies, orthopedic implant companies, and aerospace life science companies. Also, entrepreneurial activity in the health-related industries is prospering. Innovative medical and health care products can be manufactured and marketed by resourceful biomedical engineers. In industry, Louisiana Tech biomedical engineering graduates are responsible for manufacturing, quality control, research and development, management, and marketing.

One special feature of the Biomedical Engineering Program is that, upon or before graduation, students may complete the basic requirements necessary for admission to medical school. The program provides a strong quantitative background for one who wishes to pursue a future medical career. Another feature of the program is that, upon completion of the Biomedical Engineering degree program in any of the specialties, the student will be adequately prepared to continue his/her education at the graduate level by pursuing a Master of Science and/or the Doctor of Philosophy degree in Biomedical Engineering. Continued professional education in business, law, and the basic medical sciences is also possible.

Biomedical Engineering Program Objectives:

- To prepare graduates for employment as biomedical engineers, for graduate study in engineering or science or business, and for medical school. Career opportunities will include, but will not be limited to, clinical engineering, aerospace biomedical engineering, clinical practice as a physician, or any sector of the medical device industry. Our graduates will receive specific technical training in one of the following four areas: chemical engineering, electrical engineering, mechanical engineering, or pre-medical studies.
- To prepare graduates with skills that will enable them to be immediately productive in their chosen career. These tools include a knowledge of contemporary topics in medical technology, design experience, and professional experience appropriate to their post-graduation goal.
- To produce graduates who communicate effectively, who understand and undertake professional responsibilities, and who function effectively as members and leaders of multi-disciplinary teams.
- To produce graduates who believe that their undergraduate biomedical engineering education was a wise investment and who desire to continue to develop their knowledge and skills throughout their careers.

The curriculum in Biomedical Engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Biomedical Engineering Curriculum (B.S.B.M.)

Freshman Year

Natural Sciences (GER)	
Chemistry 100, 101, 102, 103, 104	8
English (GER)	6
Mathematics (GER)	
Mathematics 240, 241, 242	9
Engineering 120, 121, 122	6
Physics 201	3
	32

Sophomore Year
Natural Sciences (GER)
Biological Sciences 225, 227 6
Arts (GER) 3
Biomedical Engineering 202, 203, 230 4
Engineering 220, 221, 222 9
Mathematics 243, 244, 245 9
Physics 202 3

34

Junior Year
Humanities (GER)
English 201 or 202, and 303 6
Speech 377 3
Biomedical Engineering 225, 301, 325, 401, 425 15
Biological Science 321 1
Directed Electives* 6

31

Senior Year
Social Sciences (GER)
Economics 215 3
Additional Social Science Courses 6
Humanities (GER)
History 3
Biomedical Engineering 400, 402, 403, 404, 430, 435 12
Directed Electives 7

31

Total Semester Hours 128

(GER): General Education Requirement (pg. 29)

The Biomedical Engineering Program normally requires a "C" or better in any course in the College of Engineering and Science that serves as a prerequisite for another course.

*Directed Electives chosen by students in consultation with faculty advisor from one of the following four concentrations:

Pre-Medical**:** Chemistry 250, 251, 252, 253, 254; Physics 261, 262: One 3 hr. 300- or 400-level elective in one of the engineering programs.

Chemical Engineering: Chemical Engineering 213, 313, 353, 413, and one 3 hr. Chemical Engineering*** course at 300- or 400-level.

Computer & Information: BIEN 310, CSC 220, 6 hours taken from CSC, CIS, or HIM at 300- or 400-level, with approval of advisor, 1 hr. lab elective with approval of advisor.

Electrical Engineering: Electrical Engineering 232, 242, 335, 311, one 3 hr. Electrical Engineering*** course at the 300- or 400-level, or 1 hr. Electrical Engineering lab course, at 300- or 400-level.

Mechanical Engineering: Mechanics & Materials 201, 211, 312, Mechanical Engineering 215, and two additional 3 hr. Mechanical Engineering *** courses at 300- or 400-level.

**Students who wish to apply to medical school should be aware that they will need an additional course in Biological Sciences to meet medical school entrance requirements.

***An approved Biomedical Engineering course appropriate to this track may be substituted with consent of the student's advisor.

Chemical Engineering

The primary task of chemical engineers is the mastery of the industrial processes which chemically transform various natural resources into more useful and valuable products. These products range from paper and gasoline to medicines and computer microchips. The chemical engineer is constantly concerned with improving these processes to best conserve resources (including capital) while preserving and protecting the environment.

The education of the chemical engineer covers advanced chemistry, physics, mathematics, general engineering, computer applications, material balances, energy balances, chemical equilibria, thermodynamics, kinetics and reactor design, unit operations and transport processes, and process control, with laboratories emphasizing these areas along with oral and written communication skills.

In order to meet current career interests and opportunities, elective courses are offered in nuclear applications and safety, industrial waste treatment, specialized computer techniques (including artificial intelligence), polymer engineering, pulp and paper processes, biochemical engineering, and fire and process safety. The curriculum in chemical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

The graduate in chemical engineering is particularly versatile. Industrial work may involve the production, operations, customer service, sales, or research departments of industries producing semiconductors, microchips, metals, paper, petroleum, petrochemicals, plastics, forest products, pharmaceuticals, or foods or the technical service or process improvement sections of such industries. Meaningful careers are also available with governmental agencies or private foundations associated with space, energy, and the environment. Graduate education in medical school, dental school, business school, law school, and chemical engineering are viable alternatives. At the undergraduate level, the purpose of the program is to provide a strong basic education such that the graduate will be prepared for all these options.

The Educational Objectives for the Chemical Engineering Program are:

- To prepare students for success and lifelong learning in their chemical engineering careers.
- To train students to develop skills in creative thinking, teamwork, problem solving, and chemical engineering design.
- To teach methods of problem analysis and solution techniques including math and computational skills appropriate to the chemical engineering profession.
- To train students in experimental methods and data analysis appropriate for chemical engineering applications.
- To engage students in the training and practice of technical oral and written communication.
- To permeate our educational program with an emphasis on the professional and ethical practice of chemical engineering both by example and explicit instruction.

The program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC-ABET). Graduates of this program may obtain a license for training in chemical engineering by passing the Fundamentals of Engineering exam. Subsequently, they may become registered as Professional Engineers upon completion of the appropriate time period of engineering training and by passing the Professional Engineers exam.

Chemical Engineering Curriculum (B.S.C.H.)

Freshman Year
Natural Sciences (GER)
Chemistry 100, 101, 102, 103, 104 8
English (GER) 6
Mathematics (GER)
Mathematics 240, 241, 242 9
Engineering 120, 121, 122 6
Social Sciences (GER) 3

32

Sophomore Year
Engineering 220, 222 6
Chemical Engineering 202, 213, 254 7
Chemistry 250, 251, 252, 253 7
Mathematics 243, 244, 245 9
Physics 201 3

32

Junior Year
Humanities (GER)
English 201 or 202, and 303 6
History 3
Social Sciences (GER)

Economics 215 3
Chemical Engineering 304, 313, 332, 353, 413 13
Chemistry 311, 313 4
Engineering 221 3

32

Senior Year
Arts (GER) 3
Natural Sciences (GER)
Biological Sciences 101 3
Social Sciences (GER) 3
Chemical Engineering 402, 407, 430, 432, 434, 451 14
Directed Elective* 6
Humanities (GER) Speech 377 or English 463 3

32

Total Semester Hours 128

(GER): General Education Requirement (pg. 29)

The Chemical Engineering Program normally requires a "C" or better in any course in the College of Engineering & Science that serves as a prerequisite for another course.

*Directed Electives chosen by student in consultation with faculty advisor from courses offered in the College of Engineering & Sciences or the College of Applied and Natural Sciences. All electives must be approved by the Chemical Engineering Program Chair.

Chemistry

The chemistry curriculum offers a broad background in chemistry and results in a degree which is approved by the American Chemical Society. **Students who complete the curriculum without substitutions are eligible for Certification to the ACS.** Students entering this program generally plan to pursue a career as an industrial chemist or attend graduate school with a specialty in one of the major areas of chemistry (analytical, inorganic, organic, or physical).

Students who are interested in **pre-medicine, pre-dentistry, or biochemistry** may make the following substitutions:

Physics 209, 210 for Physics 201, 202; Humanities elective for English 303; Biological Sciences 131, 132, 133 and either 260 or 290 for Math 244, 245, 308; Biological Sciences 310 for Technical Elective; Biological Sciences 290 or 260 for Chemistry 466; Biological Science 315 or 422 for Chemistry 481; Chemistry 352, 353, 354, and one semester hour of science elective for Chemistry 409 or 420 or 424 (any two).

Chemistry Curriculum (B.S.)

Freshman Year
Chemistry 100, 101, 102, 103, 104 8
English (GER) 6
Mathematics (GER)
Mathematics 240, 241, 242 9
Social Science (GER)* 6
Natural Sciences (GER)
Biological Sciences 130 3

32

Sophomore Year
Chemistry 205 4
Chemistry 250, 251, 252, 253, 254 8
Chemistry 281 3
Mathematics 243 3
Natural Sciences (GER)
Physics 201, 202, 261, 262 8
Arts (GER) 3

29

Junior Year
Chemistry 311, 312, 313, 314 8
Chemistry 351 3
Humanities (GER)
English 201 or 202 and 303 6
Mathematics 244, 245, 308 9
Technical Elective** 3

29

Senior Year
Chemistry 466, 481 7
Chemistry 409 or 420 or 424*** (any two) 6
Chemistry 498**** 3
Chemistry 490***** 1
Humanities (GER)
History (200 level) 3
Speech 377 3
Social Sciences (GER)* 3
Electives 5

31

Total Semester Hours 121

*Economics, geography, anthropology, political science, psychology, or sociology (minimum of two disciplines).

**Technical electives must be selected in consultation with a faculty advisor. Math 313 is recommended.

***In addition to the ACS core curriculum (Chem 466 and 481 are part of the core), the ACS certified B.S. requires six hours of 400-level courses that require Physical Chemistry (Chemistry 311, 312) as a prerequisite. If Chemistry 498 is used as a 400-level class for ACS certification, a written report that meets ACS standards for undergraduate research is required.

****Each senior student must conduct an undergraduate research Capstone Project which demonstrates integration and synthesis of chemistry skills. The duration of the Capstone Project must be two or more quarters.

*****Each senior student must submit a Career Portfolio notebook that documents major aspects of chemistry training and experience.

Requirements for a Minor in Chemistry

A minor in chemistry consists of Chemistry 100, 101, 102, 103, 104, and thirteen additional hours, of which nine must be 300- or 400-level. All courses applied toward the minor must be completed with the grade of "C" or higher.

Civil Engineering

Civil engineers are in the forefront providing constructive counsel on matters vital to mankind and the environment. Civil engineers are primarily responsible for planning, designing, and constructing all the world's constructed facilities. Most people can only talk about solving traffic congestion, environmental pollution, droughts, and floods. Civil engineers help to eliminate or greatly reduce the destructive effects of these events.

Accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, the curriculum in civil engineering is designed to produce graduates who have the background necessary for the practice of civil engineering and the capacity for further development of mind and character to assume the highest responsibilities of citizenship and of professional engineering.

The up-to-date curriculum provides the fundamentals of engineering and teaches the application of those fundamentals in engineering analysis and design. It also helps the student acquire the ability to communicate, to develop a personal value system, and to have a sense of social responsibility and concern for the needs and welfare of mankind and the environment. Well-equipped laboratories enhance the classroom lectures: environmental engineering, hydraulics, materials testing, soil mechanics, structural testing, surveying, and transportation.

The student will gain some competence in all of the following areas with emphasis on at least one: structural design, environmental engineering, hydraulics, hydrology, surveying, transportation, soil mechanics, highways, and materials.

Civil Engineering Program Objectives:

- To develop the skills required to design civil engineering systems including the students' abilities to formulate problems, to think creatively, to synthesize information, and to work collaboratively in teams. The civil engineering

program at Louisiana Tech University will concentrate undergraduate instruction in areas of water resources/ environmental, structures, transportation, and geotechnical engineering.

- To train students thoroughly in methods of analysis, including the mathematical and computational skills appropriate for civil engineers to use when solving problems.
- To prepare students for life-long learning and successful careers as civil engineers.
- To teach students to use current experimental and data analysis techniques for civil engineering applications.
- To develop oral and written communication skills that allow students to present information effectively.
- To instill in our students an understanding of their professional and ethical responsibilities.

Civil Engineering Curriculum (B.S.C.V.)

Freshman Year
Natural Sciences (GER)
Chemistry 100*, 101*, 103* 5
Physics 201* 3
English (GER)
English 101, 102 6
Humanities (GER)
History 3
Mathematics (GER)
Mathematics 240*, 241*, 242* 9
Engineering 120*, 121*, 122* 6
32

Sophomore Year
Humanities (GER)
English 303, 463 6
Civil Engineering 202, 254 4
Engineering 220*, 221, 222 9
Mathematics 243*, 244*, 245 9
Mechanics & Materials 201, 211* 4
Physics 202 3
35

Junior Year
Arts (GER) 3
Natural Sciences (GER)
Biological Sciences 101 3
Social Sciences (GER) 3
Civil Engineering 310, 324, 332, 333, 340, 341 17
Mechanics & Materials 312, 313* 5
31

Senior Year
Humanities (GER)
English (Literature) 3
Social Sciences (GER) 6
Civil Engineering 314, 325, 411 or Structural Analysis & Design course, 439, 492, 493, 494 15
Directed Electives** 6
30

Total Semester Hours 128

(GER): General Education Requirement (pg. 29)
*Grade of "C" or higher required.
**Directed Electives chosen by student in consultation with faculty advisor and approved by the Civil Engineering Program Chair.

Construction Engineering Technology

The program prepares the graduate for the responsibilities of managing and supervising all of the activities related to converting the plans and specifications prepared by engineers and architects into finished facilities. With increasing demand for economical service and continuous quality improvement, the construction industry continues to improve its technology as well as its management efficiency.

The program provides technical and managerial education in that field of construction most closely aligned with engineering, with a particular emphasis on highway, heavy, and underground construction.

The four-year curriculum leading to the degree of Bachelor of Science in Construction Engineering is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology. It is in many ways similar to civil engineering but has the following major differences:

- Emphasis is on practical application of engineering science rather than upon the comprehensive understanding of the scientific theories.
- Considerable time is devoted to management and business administration courses.
- Less time is devoted to mathematics and the sciences.

Although not trained to become licensed professional engineers, graduates of this program are qualified to fill many professional positions in governmental agencies, industrial concerns, manufacturing companies of construction supplies and equipment, and in construction firms. These jobs may involve contract supervision, intermediate managerial responsibilities, inspection or sales, as well as the supervised design of construction projects. The undergraduate business and management training should help graduates move up the executive ladder to success.

On occasion courses in construction are shared with the Construction programs at Grambling State University and the University of Louisiana at Monroe.

The Construction Engineering Technology Program at Louisiana Tech University will:

- Develop the skills needed for entry level managerial or technical positions in the construction industry involving such functions as construction contract administration, direct construction supervision, cost estimating, scheduling inspection, surveying, material testing, sales or the supervised design of project components.
- Emphasize the skills needed for the heavy-highway, underground utility, and building structural frame construction segments of the industry.
- Educate students in methods of analysis needed to manage construction and solve problems as construction engineering technologists. Methods include:
  - a. Appropriate mathematical and computational methods
  - b. Construction cost and project cash flow analysis methods
  - c. Scheduling methods
- Prepare graduates to apply concepts, methods and principles needed for engineered construction practice.
- Prepare students for lifelong learning and successful careers in the construction industry.
- Develop oral and written communication skills that allow graduates to present and exchange information effectively and direct construction activity.
- Instill an understanding of professional, ethical and societal responsibilities.

Construction Engineering Technology Curriculum (B.S.C.T.)

Freshman Year
Natural Sciences (GER)
Biological Sciences 101 3
Physics 209, 261 4
English (GER)
English 101, 102 6
Mathematics (GER)
Mathematics 111, 112 6
Business Law 255 3

Civil Engineering 254 3
Civil Technology 100 3

28

Sophomore Year
Humanities (GER)
English 303 3
Natural Sciences (GER)
Physics 210, 262 4
Social Sciences (GER)
Economics 215 3
Social Sciences courses 6
Micro Computer Applications Electives (GER) 3
Mathematics 220 3
Mechanics & Materials 206 3
Statistics 200 3
Accounting 201 3
Architecture 301 2

33

Junior Year
Humanities (GER)
Speech 3
Management 201 plus an additional management course 6
Chemistry 120 3
Civil Engineering 436 3
Civil Technology 210, 372, 373, 471, 473 15
Industrial Engineering 300 2
Electrical Technology 274 1

33

Senior Year
Arts (GER) 3
Humanities (GER)
English (Literature) 3
History 3
Civil Engineering 357, 437, 438, 439 10
Civil Technology 424, 475, 492 6
Directed Electives* 6

31

Total Semester Hours 125
(GER): General Education Requirement (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor, the Construction Engineering Technology Program Coordinator, and approved by the Civil Engineering Program Chair.

Computer Science

Computer Science is primarily concerned with the study of algorithms and the data structures on which they operate. Topics of interest include problem analysis; algorithm design, implementation, and testing; the definition of programming languages and the construction of environments for creating software; the study of computing hardware; the human/computer interface; and the development of formal techniques for characterizing algorithm efficiency.

The computer science curriculum at Louisiana Tech is designed to provide students with (1) a general education in mathematics, science, and the humanities; (2) an in-depth study of computing, including the practical and theoretical aspects of both hardware and software; (3) an opportunity for graduate study or a challenging position in industry. Because of the rapid pace of change in the field, the program places primary emphasis on fundamental computing concepts.

Computer Science Curriculum (B.S.C.S.)
Freshman Year
Natural Sciences (GER)
Biological Sciences 130, 131 4
English (GER) 6
Humanities (GER)
History 3
Mathematics (GER)
Mathematics 240, 241, 242 9
Computer Sciences 100, 120, 220 9

31

Sophomore Year
Arts (GER) 3
Social Sciences (GER)
Economics 215 3
Additional Social Science course 3
Natural Sciences (GER)
Physics 201, 202, 261, 262 8
Mathematics 311 3
Computer Science 230, 240, 251, 265, 269 12

32

Junior Year
Humanities (GER)
English 303 3
English (Literature) 3
Speech 377 3
Computer Science 310, 325, 330, 345, 364 15
Directed Elective*
Mathematics/Science 3
Minor/Support Area** 6

33

Senior Year
Social Sciences (GER) 3
Computer Science 404 3
Statistics 405 or Industrial Engineering 400 3
Directed Electives*
Computer Science 9
Minor/Support Area** 12

30

Total Semester Hours 126
(GER): General Education Requirement (pg. 29)
*Directed Electives chosen by student in consultation with faculty advisor and approved by the Computer Science Program Chair.
**All computer science majors are required to complete a minor in another discipline. The Computer Science Program Chair must approve the minor subject. After the requirements for a minor have been met, the balance of the minor/support area courses should be chosen from science, mathematics, engineering, computer science, or approved business courses.

Requirements for a Minor in Computer Science
Students in other departments who wish to minor in computer science are required to take 21 semester hours of computer science courses consisting of Computer Science 100, 120, 220, 325, and nine additional hours (six of which must be at the 300-level or above). All courses applied toward the minor must be completed with the grade of "C" or higher. Subject to the approval of the Computer Science Program Chair, students who complete a second bachelor's degree may use that degree to satisfy the minor requirement.

Electrical Engineering

Electrical Engineering is that profession which deals with the application of the fundamental laws of electrical phenomena to the service of mankind. Broadly, electrical engineers are involved in one or more of the following areas: electromagnetics; the design of electronic and solid-state devices; the control, conversion, and distribution of energy; computing and data processing; and communications including transmission and retrieval.

The Educational Objectives of this program follow:

- Depth. To produce graduates who have a fundamental knowledge needed for the practice, or advanced study in, electrical engineering. Our graduates will receive an emphasis in at least two of the following four application

areas: electric power, communications, controls, and microelectronics.

- Breadth. To produce graduates who have a broad education necessary for productive careers or the pursuit of graduate education, including a knowledge of important current issues in electrical engineering.
- Professionalism. To produce graduates who have strong communications skills, who understand and undertake professional ethical responsibilities, and who function effectively as members and leaders of multi-disciplinary teams.
- Lifelong Learning. To produce graduates who believe that their undergraduate electrical engineering education was a wise investment and who continue to develop their knowledge and skills after graduation.

The curriculum is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC-ABET). Graduation from an EAC-ABET accredited program is one of the requirements for qualifying as a Registered Professional Engineer in Louisiana as well as most other states. If, in addition to meeting the minimum requirements established for an EAC-ABET accredited curriculum, a graduate has maintained a relatively good scholastic record, the graduate may qualify for further study in the advanced degree program.

The College of Engineering and Science offers the opportunity for graduate study leading to the degree of Master of Science and the Doctor of Philosophy in Engineering. These programs seek to build on the basic foundations established by the undergraduate course of study. Each is in large measure an individual matter developed jointly by the student and an Advisory Committee. The plan of study may reflect a desire for more specialized undertakings or a continuing interest in the broad, underlying theories of the profession. In each case, the culmination of the program is the required graduated research project, with thesis or dissertation, accomplished with aid and guidance of a research advisor. An M.S. non-thesis option is available with additional course work. Those who attain an advanced degree will find a wide range of opportunities for rewarding careers in many areas of business, industry, government, and education.

Electrical Engineering Curriculum (B.S.E.E.)

Freshman Year
English (GER) 6
Mathematics (GER)
  Mathematics 240, 241, 242 9
Natural Sciences(GER)
  Biological Science 101 3
  Physics 201 3
  Chemistry 100, 101, 103 5
Engineering 120, 121, 122 6

32

Sophomore Year
Humanities (GER)
  History 3
Natural Sciences (GER)
  Physics 202 3
Social Sciences (GER) 3
  Economics 215 3
Engineering 220, 221, 222 9
Mathematics 243, 244, 245 9
Electrical Engineering 232, 311 4

31

Junior Year
Humanities (GER)
  English 201 or 202 3
Social Sciences (GER) 3
Industrial Engineering 300 2
Electrical Engineering 223, 242, 321, 334, 335, 381, 411 21
Mechanical Engineering 292 3

32

Senior Year
Arts (GER) 3
Humanities (GER)
  English 303, 463 6
Social Sciences (GER) 3
Electrical Engineering 406, 407, 408, 422 7
Directed Electives* 6
Electrical Engineering Senior Option** 8

33

Total Semester Hours 128

(GER): General Education Requirement

*Directed Electives chosen by the student in consultation with faculty advisor from an approved list of courses offered in the College of Engineering & Science.

**Electrical Engineering Seniors are required to complete two groups of courses (total 8 hrs.) selected from the following three groups:
Electrical Engineering 461(3) & 469(1)
Electrical Engineering 471(3) & 479(1)
Electrical Engineering 481(3) & 489(1)

Electrical Engineering Technology

The increasing complexity of industrial processes and the expansion in research and production have created demand for a new group of specialists known as engineering technologists. These technologists work with professional engineers and scientists or assume independent responsibility in the production, installation, operation, and maintenance of complex technical apparatus. The engineering technologist organized the personnel, materials and equipment to design, construct, operate, and manage technical projects. The engineering technologist coordinates people, materials, and machines and must possess a variety of skills and practical and theoretical knowledge.

Electrical Engineering Technology includes the areas of computers, electrical power, communications, instrumentation, and control systems. The program combines course work and coordinated laboratory work so that graduates will be capable of performing a variety of technical tasks demanded of them. The course and laboratory work emphasize the latest in solid-state and integrated circuit and microprocessor technology. The graduate will also have received training in technical writing, public speaking, documentation, and general industrial practices which result in rapid advancement in a typical industrial organization. Thus, the program produces graduates qualified for a wide variety of commercial and industrial employment in the rapidly developing electrical-electronics technology field.

The program is accredited by the Technology Accreditation Commission Board for Engineering and Technology (TAC-ABET).

Electrical Engineering Technology Curriculum (B.S.E.T.)

Freshman Year
Arts (GER) 3
Computer Literacy (GER)
  Computer Science 100 3
English (GER) 6
Humanities (GER)
  History 3
Mathematics (GER)
  Mathematics 111, 112 6
Electrical Engineering Technology 100, 170,171,180,181 9

30

Sophomore Year
Natural Sciences (GER)

Physics 209, 210, 261, 262 8
Mathematics 220, 223 6
Electrical Engineering Technology 260, 261, 270, 271, 272, 273, 280, 284 19

33

Junior Year
Humanities (GER)
English (Literature) 3
English 303 3
Social Sciences (GER) 3
Chemistry 100, 101, 103 5
Engineering Mechanics 206 3
Electrical Engineering Technology 360, 361, 370, 371, 390 11
Mechanical Technology 215 3

31

Senior Year
Natural Sciences (GER)
Biological Sciences 3
Humanities (GER)
Speech 377 3
Social Sciences (GER) 6
Electrical Engineering Technology 460, 461, 465, 470, 471, 472 11
Directed Electives*
Electrical Engineering Technology 4
Additional Course 3

30

Total Semester Hours 124
(GER): General Education Requirements (pg. 28)
*Directed Electives chosen by student in consultation with faculty advisor and approved by the Electrical Engineering Program Chair.

Geosciences

Geology is a diverse field that encompasses many areas of specialization such as environmental geology, geochemistry, geophysics, hydrogeology, mineralogy, oceanography, paleontology, petrology, petroleum geology, sedimentology, stratigraphy, and structural geology. These fields touch every facet of modern civilization and economic development from the discovery and development of mineral resources to the identification and remediation of environmental problems to the more exotic exploration of the moon and planets. There are numerous employment opportunities available for geologists with petroleum, mining, and environmental industries, U.S. Army Corps of Engineers, U.S. Navy, National Park Service, NASA, and other branches of local, state, and federal government.

The geosciences curriculum, leading to the Bachelor of Science degree in geology, is designed to give students a broad and fundamental education in geology with a background in mathematics, physics, chemistry, and technical writing. There is enough flexibility to allow students to earn a minor in diverse areas such as technical writing, chemistry, and business. The curriculum is designed for those students planning for a professional career in geology, the earth sciences, or an advanced degree.

Geology Curriculum (B.S.G.)
Freshman Year
Natural Sciences (GER)
Chemistry 100, 101, 102, 103, 104 8
English (GER) 6
Humanities (GER)
English 201 or 202 3
Geology 111*, 112*, 121*, 122* 8
Mathematics (GER)
Mathematics 240*, 241* 6

31

Sophomore Year
Natural Sciences (GER)
Biological Sciences 130 3
Social Sciences (GER)
Economics 215 3
Geology 209, 211, 318 9
Humanities (GER)
History 3
Mathematics 242*, 243 6
Physics 209, 210, 261, 262 8

32

Junior Year
Arts (GER) 3
Humanities (GER)
English 303 3
Geology 302, 303, 305, 315, 316 14
Geology 320 (Summer Field Camp) 6
Agricultural Sciences 320 3
Social Sciences (GER) 3

32

Senior Year
Geology 422, 460 6
Humanities (GER)
Speech 377 or English 463 3
Social Sciences (GER) 3
Directed Electives** 17

29

Total Semester Hours 124
(GER): General Education Requirement (pg. 29)
*Must achieve a C or better in each of these courses to advance.
**Directed Electives chosen by student in consultation with faculty advisor.

Requirements for a Minor in Geology
A minor in geology consists of Geology 111, 112, 121, 122, and 13 additional hours, at least 9 of which must be at the 300 or 400 level. All courses applied toward the minor must be completed with the grade of "C" or higher.

Industrial Engineering

Industrial engineering involves decision-making related to the best use of people, material, equipment and energy to achieve the goals of an organization. The organization may be a manufacturing facility, hospital, bank, amusement park, airline, government office, or any other group organized to make a product or perform a service. Industrial Engineers (IEs) make significant contributions to their employers by saving money while making the workplace better for fellow workers.

If there is one phrase that summarizes the activities of IEs, it is "the search for a better way." For example, a better way to make workplaces more comfortable and safer by improving workstations and work procedures, a better way to perform assembly operations using robots and machine vision systems, a better way to reduce inventory cost using Just-In-Time (JIT) technology, a better way to assure product quality by statistical process control (SPC) techniques, a better way to improve the efficiency of the entire organization by a computerized enterprise resource planing (ERP) system, and so on.

Manufacturing firms and service industries hire a significant number of IEs. Today, more and more businesses hire IEs in areas like computer information systems, business operations, finance, and sales & marketing. Corporations as diverse as Coca Cola, UPS, Disney, IBM, Entergy, Nike, The Gap, Intel, Microsoft, Motorola, Boeing all use people with IE backgrounds to help manage their business. Many IEs enter the workforce as engineers but eventually move up to the upper level of management.

The industrial curriculum has been developed to prepare students for meaningful careers in this challenging and important branch of engineering. The success of the program is evidenced by the high demand for its graduates in all sectors of

the economy and the many professional accomplishments of the faculty.

The Educational Objectives of the Industrial Engineering Program follow:

- To produce graduates that can use the techniques, skills, and modern engineering tools for successful industrial engineering careers that support local/regional/national economy
- To produce graduates who can design and integrate systems with machines, people, materials, and information for productivity, quality and work environment improvements
- To produce graduates with effective written and oral communication skills
- To produce graduates who can work collaboratively in teams and understand their professional and ethical responsibilities
- To produce graduates capable to continue into graduate program and/or life-long learning

The program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC-ABET). Graduates of this program are qualified to pursue registration as a Professional Engineer in Louisiana as well as most other states.

Industrial Engineering Curriculum (B.S.I.E.)

Freshman Year
Natural Sciences (GER)
Chemistry 100*, 101*, 103*, 104 6
English (GER) 6
Mathematics (GER)
Mathematics 240*, 241*, 242* 9
Engineering 120*, 121*, 122* 6
Physics 201* 3
Industrial Engineering 101 3
33

Sophomore Year
Natural Sciences (GER)
Biological Sciences 101 3
Engineering 220, 221, 222 9
Industrial Engineering 300, 301 4
Mechanical Engineering 215, 321, 351 5
Mechanic & Materials 201 2
Mathematics 243*, 244*, 245 9
32

Junior Year
Humanities (GER)
English 303, 463 6
History 3
Social Sciences (GER)
Economics 215 3
Industrial Engineering 400, 401, 402, 404, 405, 407, 409 21
33

Senior Year
Arts (GER) 3
Social Sciences (GER) 6
Humanities (GER)
English (Literature) 3
Industrial Engineering 408, 410, 411, 412 10
Directed Electives** 9
31

Total Semester Hours 124
(GER): General Education Requirement (pg. 29)
*Grade of "C" or higher required.
**Directed Electives, chosen by student in consultation with faculty advisor and approved by the Industrial Engineering Program Chair.

Students receiving a grade of "D" or "F" in any mathematics course that is a prerequisite of another required course in the curriculum, must repeat and pass the failed course prior to proceed in the curriculum. The maximum number of industrial engineering courses that are allowed to receive a grade of "D" is two. Students receiving more than two Ds in industrial engineering courses must repeat and pass one or more failed courses until this requirement is met.

Mathematics and Statistics

Mathematics and statistics courses are designed as follows: (1) to provide mathematics courses in the core curriculum; (2) to serve the requirements of students pursuing a curriculum in business, education, engineering, etc.; and (3) to provide students majoring in mathematics a thorough preparation for graduate mathematics or employment in industry or education. This program leads to the Degree of Bachelor of Science.

Placement in Mathematics and Statistics

Placement in entry-level college mathematics and statistics courses is based on the Enhanced ACT/SAT Math score. If no scores are on file in the Office of Admissions or the Office of the University Registrar, the score will be assumed to be 0.

The ACT/SAT Math score is used as a measure of preparation for entry-level college mathematics and statistics courses. Placement Evaluations are offered if a student desires to bypass the course required by ACT/SAT Math placement. The placement procedure stated below ensures that each student begins the study of mathematics and statistics at a level for which he or she is prepared.

ACT/SAT MATH Score	Course Placement
0-15 ACT MATH 0-370 SAT MATH	Placement in MATH 099. Not eligible for Math Placement Exam.
16-17 ACT MATH 380-420 SAT MATH	Placement in MATH 099 or take and pass Placement Exam A** to place in MATH 100*
18-21 ACT MATH 430-510 SAT MATH	Placement in MATH 100*. No Placement Exam is available for bypassing MATH 100.
22-23 ACT MATH 520-550 SAT MATH	Placement in MATH 101. Not eligible for Math Placement Exam.
24-25 ACT MATH 560-580 SAT MATH	Placement in MATH 101 or take and pass Placement Exam B to earn credit for MATH 101. Advance preparation for the exam is necessary**.
26 or higher ACT MATH 590 or higher SAT MATH	Credit for MATH 101 will be granted if MATH ACT/SAT score was earned within the previous five years. Eligible to enroll in MATH 101 or Math or Statistics course that has MATH 101 as th only Math prerequisite. If such a student desires to begin with MATH 220 or 222 as the first math course, Placement Exam C is required to earn credit for MATH 111 and 112. Advance preparation for the exam is necessary**.

NOTE: Permission to take a placement/credit exam in a given course will be denied those students who have previously attempted the course and/or the placement/credit exam. Refer to the "Louisiana Tech Credit Examinations" sections of this Bulletin for additional information.

* MATH 100 serves as a replacement for MATH 101 for students required to enroll in MATH 100.

** Various review materials for the Math Placement Exams are available free of charge by accessing the web site **rehanna.pageout.net** . Select the desired course, then "Syllabus", then select "Instructions for Accessing Review Materials". Print the instruction sheet and follow the stated instructions.

Transfer students who do not have credit for the equivalent of the mathematics prerequisite for a course must satisfy the same placement criteria as entering freshman. This may require submission of ACT/SAT score reports that would not be needed for transfer admission to the University. Transfer credit for

prerequisite mathematics courses must be evaluated and approved through the mathematics program before registration in a mathematics or statistics course.

The degree of success in the mathematics or statistics course of placement is ultimately determined by both your mathematics preparation for the course and your meeting the performance expectations for the course. The curriculum requirements for your major will determine which mathematics and statistics courses you are required to complete.

In addition to the ACT/SAT and Placement Evaluation requirements for placement in entry-level college mathematics and statistics courses, it is assumed that college preparatory courses, as indicated below for each level, have been completed with a grade of C or higher on the content normally covered in such courses. Also note that an ACT Math score of at least 22 or an SAT Math score of at least 520 is required in order to begin entry-level mathematics or statistics courses without having deficiency work to complete. An ACT Math score of at least 26 or an SAT Math score of at least 590 is required for courses with Math 101 as prerequisite.

Mathematics Course Level	ACT/SAT and College-Prep Course Prerequisite Requirement
MATH 099: Preparation for College Math	College Prep: Algebra I
MATH 100B-C: College Algebra (5-Hour Format)	MATH ACT: 18-21 MATH SAT: 430-510 College Prep: Algebra I, Algebra II
MATH 101: College Algebra (3-hr. format)	MATH ACT: 22 or higher MATH SAT: 520 or higher College Prep: Algebra I, Algebra II
Courses with MATH 101 as Prerequisite	MATH ACT: 26 or higher MATH SAT: 590 or higher College Prep: Algebra I, Algebra II, Geometry, One other College Prep Math
MATH 220, or 222, or 240	College Prep: Algebra I, Algebra II, Geometry, Trigonometry, Advanced Algebra

Mathematics Credit by Placement Exam

Credit for MATH 101 will be granted for each student with MATH ACT score greater than or equal to 26 or MATH SAT score greater than or equal to 590 of the MATH ACT/SAT score was earned within the previous five years.

Credit for MATH 101, MATH 111, or MATH 112 will be granted to each student who is eligible for and successfully completes the Placement Exam for the course. See the Placement in Math and Statistics section of this Bulletin for eligibility requirements for each exam.

Requirements for a Major in Mathematics

Each student majoring in mathematics is assigned an advisor from the Mathematics and Statistics program. The student is requested to meet with his/her advisor at least once during each quarter, at which time courses for the following quarter are decided upon.

Each mathematics major must complete the mathematics curriculum which follows with a grade of 'C' or higher in all mathematics and statistics courses, and must complete a minor. The minor subject must be chosen with the approval of the student's advisor. The minor requirements are listed under the department concerned.

Students who wish to obtain a more intensive degree program with a concentration in statistics-mathematics -engineering are not required to declare a minor if they earn credit for the following courses: (1) fifteen semester hours of 400-level mathematics and statistics courses (with a minimum of 9 semester hours of mathematics courses) which are approved by the student's advisor; and (2) six semester hours of engineering courses which are approved by the student's advisor. Note: No course may count toward the required mathematics and statistics courses in the mathematics curriculum and also the statistics-mathematics-engineering concentration.

Mathematics Curriculum (B.S.)

Freshman Year
Natural Sciences (GER)
- Chemistry 100, 101, 102, 103, 104 8

English (GER) 6
Mathematics 240, 241, 242 9
Humanities (GER)
- History 101, 102, 201, or 202 6

29

Sophomore Year
Computer Literacy (GER)
- Computer Science 120 3

Social Sciences (GER) 6
Mathematics 243, 244, 245 9
Physics 201, 202, 261, 262 8
Humanities (GER)
- English 201 or 202 3

Electives for Minor/Concentration 3

32

Junior Year
Arts (GER) 3
Foreign Language 6
Mathematics 307, 308 6
Mathematics or Statistics Elective* 6
Natural Sciences (GER)
- Biological Sciences 3

Electives for Minor/Concentration 9

33

Senior Year
Humanities (GER)
- English 303 3
- Speech 110 3

Mathematics 318, 340 6
Mathematics or Statistics Elective* 6
Electives for Minor/Concentration 6
Science Elective 3
Social Sciences (GER) 3

30

Total Semester Hours 124

(GER): General Education Requirement (pg. 29)
*Mathematics electives above 300, Statistics electives above 200 (other than STAT 402).

Requirements for a Minor in Mathematics

Students in other departments who wish to minor in mathematics are required to take Math 240, 241, 242, 243, 244, 245 and an additional 9 semester hours earned in statistics courses or mathematics courses numerically above Math 300 and Statistics 200 (other than STAT 402). No more that 6 semester hours may be in statistics. All courses applied toward the minor must be completed with the grade of "C" or higher.

Mechanical Engineering

Mechanical Engineering is the profession that deals with the design, development, testing, manufacturing, and maintenance of machines, systems, devices, and components for the betterment of society. Mechanical engineers are involved with such areas as aerospace engineering, automatic control systems, automotive engineering, chemicals, oil and gas, computer aided design, manufacturing, energy conversion, engineering materials, environmental engineering, machine design, manufacturing processes, medicine, robotics, stress analysis, and thermal systems.

Mechanical engineers may deal with hardware as small as a microchip or as large as an aircraft carrier. They may work from

the bottom of the ocean up to the weightless environment of interplanetary space. Of all the engineering disciplines, mechanical engineering is the most diversified and offers the largest selection of career paths. If you can see it or touch it, a mechanical engineer probably helped to create it.

The mechanical engineering curriculum at Louisiana Tech is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The curriculum is designed to prepare students for the practice of mechanical engineering through the achievement of the following educational objectives:

- To prepare students for lifelong learning and successful mechanical engineering careers
- To train students thoroughly in methods of analysis, including the mathematical and computational skills appropriate for mechanical engineers to use when solving problems
- To develop the skills pertinent to the engineering design process, including the students' abilities to formulate problems, to think creatively, to synthesize information, and to work collaboratively in teams
- To teach students to use current experimental and data analysis techniques for mechanical engineering applications
- To develop oral and written communication skills that allow students to present information effectively
- To instill in our students an understanding of their professional and ethical responsibilities

The curriculum includes courses featuring a wide variety of both technical and non-technical topics. Instruction is delivered in a variety of modes designed to assure that upon graduation, each student has the ability to become a successful Mechanical Engineer.

Mechanical Engineering Curriculum (B.S.M.E.)

Freshman Year
Natural Sciences (GER)
- Chemistry 100*, 101*, 103* 5
- Physics 201* 3
- Biological Sciences 101 3

English (GER) 6
Mathematics (GER)
- Mathematics 240*, 241*, 242* 9

Engineering 120*, 121*, 122* 6

32

Sophomore Year
Natural Sciences (GER)
- Chemistry or Physics 3

Social Sciences (GER) 3
Humanities (GER)
- English 303 3

Engineering 220*, 221*, 222* 9
Mechanical Engineering 215, 292 4
Mechanics & Materials 201*, 312* 4
Mathematics 243*, 244*, 245* 9

35

Junior Year
Humanities (GER)
- History 3

Industrial Engineering 300 2
Mechanical Engineering 321, 334, 351
353, 361, 363, 371, 382 20
Mechanics & Materials 211, 313 5

30

Senior Year
Arts (GER) 3
Social Sciences (GER) 6
Humanities (GER)
- English (Literature) 3
- English 463 3

Mechanical Engineering 400, 451, 465, 486, 492, 494 10
Directed Electives** 6

31

Total Semester Hours 128
(GER): General Education Requirement (pg. 29)
*Grade of "C" or higher required.
**Directed Electives, chosen by student in consultation with faculty advisor and approved by the Mechanical Engineering Program Chair.

Physics

This curriculum is designed to give a broad and fundamental knowledge of the principles of physics as well as an introduction to the techniques of physics research. Although the primary aim of the basic curriculum is to prepare the student for graduate work in physics, sufficient specialized courses are available to prepare the graduate for jobs in industry and in various government laboratories. A physics major is an excellent choice for the pre-medical student.

Requirements For a Major in Physics

Each student majoring in physics is required to follow the physics curriculum leading to the Bachelor of Science degree in physics.

For students interested in interdisciplinary fields involving physics, it is suggested that the physics curriculum be followed with all electives taken in the other field of interest. Some interdisciplinary fields are listed with the appropriate elective field in parentheses: astrophysics (astronomy), geophysics (geology), materials science (chemistry and engineering), biophysics (microbiology), mathematical physics (mathematics), solid state (chemistry and engineering).

Physics Curriculum (B.S.)

Freshman Year
Natural Sciences (GER) 6
English (GER) 6
Humanities (GER) 3
Social Sciences (GER) 3
Mathematics (GER)
- 240, 241, 242 9

Physics 102, 103 2

29

Sophomore Year
Arts (GER) 3
Humanities (GER) 6
Mathematics 243, 244, 245 9
Physics 201, 202, 261, 262, 304 8
Directed Electives* 6

32

Junior Year
Natural Sciences (GER) 3
Humanities (GER) 3
Mathematics Elective 3
Physics 307, 416, 417, 418, 419, 422 14
Directed Electives* 9

32

Senior Year
Social Sciences (GER) 6
Physics 406, 407, 408, 409, 423, 424 13
Directed Electives* 9

28

Total Semester Hours 121

(GER): General Education Requirement (pg. 29)
*Directed electives can be chosen from advanced Physics, Mathematics, Engineering, Computer Science, or Chemistry courses and must include at least one computer programming course such as Engineering 102 (C++) or Computer Science 120.

Requirements for a Minor in Physics

Students from other departments who elect a minor in physics should complete Physics 201, 202, 261, 262 and 14 semester hours of advanced courses 300-400 level. All courses applied toward the minor must be completed with the grade of "C" or higher.

Laser/Optics Concentration

A laser/optics concentration is designed to provide students with more specific studies in the area of lasers and optics. Technical electives in the third and fourth years of study are to be taken from courses such as physical optics, geometrical optics, lasers, modern optics, and Fourier optics. Laboratory courses emphasize hands-on learning through experimentation with modern optical equipment.

College of Liberal Arts

Officers of Instruction

Dean
Edward C. Jacobs
Associate Dean
Dennis E. Minor
School of Architecture
Henry Stout, Director
School of Art
Dean C. Dablow, Director
School of Literature and Language
Carole S. Tabor, Director
Department of History
Stephen Webre, Head
Department of Journalism
Wiley H. Hilburn, Jr., Head
School of the Performing Arts
Kenneth Robbins, Director
Department of Professional Aviation
G. Dale Sistrunk, Head
Department of Social Sciences
Robert K. Toburen, Head
Department of Speech
J. Clarice Dans, Head

Purpose

The College of Liberal Arts serves both its own majors and the University community in the following ways:

1. it offers courses in such areas as English, history, foreign languages, the arts, and social sciences which are required in many of the curricula at Louisiana Tech University;
2. it provides traditional humanities and arts courses for students desiring minor fields of study, for non-traditional students who may or may not seek a degree, and for any other student interested in learning about various areas of liberal arts;
3. it provides pre-professional training for those students who intend to study law and speech-language pathology or audiology;
4. it assists in the preparation of prospective teachers who desire to major in such subjects as art, English, foreign languages, music, social science, and speech;
5. it provides specialized training for vocations in such fields as architecture, aviation, graphic design, journalism, music, and theatre; and
6. it provides graduate training leading toward various graduate degrees.

Through their studies, students in the College of Liberal Arts become acquainted with many areas of intellectual interest and acquire a thorough knowledge of a specific field through the courses in their major field. Overall, this liberal arts education prepares students for business and professional careers as well as providing the basis for a richer and better life.

Garnie W. McGinty Chair of History

The Garnie W. McGinty Chair of History, endowed in 1977 by Dr. G.W. McGinty, former head of the Department of History at Louisiana Tech University, is occupied by a member of the department who is chosen by his/her colleagues on the basis of achievement in research, publication, and teaching. The McGinty Trust Fund also enables the department to publish outstanding works in the field of history.

Awards

Alpha Rho Chi Award
This medal, which is an award from a national honor society, is presented each year to a graduating student for his/her service to the School of Architecture, general ability, and potential contribution to the profession.

American Institute of Architects Gold Medal
Awarded annually to a graduating student, the AIA Medal recognizes outstanding scholarship and academic ability.

Tau Sigma Delta Medal
Given annually for excellence in design on the basis of a juried submission of a completed student design project, this medal is presented by the Louisiana Tech Chapter of the Tau Sigma Delta Honor Society.

Outstanding Aviation Student Award
Alpha Eta Rho presents an outstanding student award to a senior who has excelled in academics, flight training, and leadership. The recipient must be an aviation major, but does not have to be a member of the fraternity.

Outstanding Flight Instructor Award
Alpha Eta Rho presents an outstanding flight instructor award to a student instructor who has demonstrated the highest degree of professionalism in his/her flight instructor duties.

Professional Aviation Faculty Award
The professional aviation faculty presents this award to a student in recognition of outstanding service rendered to the department and the University.

Speech-Language Pathology and Audiology Awards
Each year the speech-language pathology and audiology faculty presents honor awards to outstanding speech-language pathology and audiology graduate students who have excelled in academic achievement, clinical practicum, and/or research activities. These awards are presented annually during May, Better Speech and Hearing Month.

L. M. Sciro Award for Theatre or Stage Management
The theatre faculty annually recognizes outstanding achievement by a student who has excelled in either theatre or stage management. The recipient must be a theatre major or minor of at least junior standing. The award was established by the friends of Mrs. Lula Mae Sciro, an honorary member of the Tech Theatre Players, who was a devoted supporter of Tech and its theatre program until her death in 1988.

Arthur W. Stone Playwriting Award
This award was established in 1980 to honor the retired Director of Theatre whose 28 years of service to the Theatre at Tech provided the cornerstone of Tech's theatre program.

Gregory Stone Memorial Performing Arts Award
This award was established in 1994 by the family and friends of Gregory Stone, son of Arthur and Bea Stone, of Ruston. As an artist and great lover of the arts, Gregory's memory will be celebrated in this award which will be presented to performing arts students with exceptional talent.

John D. Winters Endowed Award in Theatre

This prestigious award is presented annually to a Theatre major who has demonstrated exceptional talent in their area of specialty, i.e., acting, directing, design, management, movement, technical theatre, or other theatre related areas at the discretion of the awards committee, co-chaired by the Director, School of the Performing Arts and the Coordinator of Theatre.

Robert E. Cheatham III Honors Recital Awards

These awards, established in 2002 by the School of the Performing Arts faculty in memory of Bobby Cheatham who served the University and School for twenty-eight years, are presented each spring to those students chosen from performance studios to participate in the Robert E. Cheatham III Honors Recital.

Vera Alice Paul Award

This award is named in honor of Miss Vera Alice Paul, who was the first faculty member at Louisiana Tech to devote her schedule to the teaching of speech and to directing plays. The award is presented to individuals who uphold the highest standards of professionalism in the theatre arts and who have attained the highest levels of achievement in this field.

Tech Tony Awards

The School of the Performing Arts, University Theatre, and the Tech Theatre Players present the Tech Tony Awards for outstanding acting, directing, technical theatre, and set design at an annual banquet. Recipients are selected by the University Theatre season subscription members, theatre faculty, and members of the Tech Theatre Players.

Band Service Award

The Band Department makes participation awards to qualified students who participate in the major ensembles within the Band Department without regard to major. An audition and appropriate letter of recommendation are required. Deadline is February 1 or until available funds are awarded. Students are required to participate in ensembles as directed by the Director of Bands, maintain a 2.0 GPA, and pass 30 semester hours in an academic year.

Band Staff Service Award

This award is made to selected students who maintain continuous participation in the major ensembles of the Band Department without regard to major. Students must show exceptional skill and interest in the areas of band library management, uniform management, or equipment management. Applicants are interviewed each spring and awards and assignments are made for the following academic year.

Band Hoop Troop Basketball Band Award

This participation award is given to members of the Basketball Hoop Troop who are selected by audition in the fall of each academic year without regard to major. Preference is given to members of the marching band and those students maintaining continuous service in the major ensembles of the Band Department.

Band Jazz Ensemble Service Award

This participation award is given to students selected by audition just prior to the beginning of each quarter who participate in the University Jazz Ensemble. This award is given without regard to major.

Band Wind Ensemble Service Award

This participation award is given to students who become members of the Symphonic Wind Ensemble by audition at the end of the Fall Quarter. Students must have been members of the marching band and maintain continuous service in the major ensembles of the Band Department. Students are required to maintain a 2.0 GPA and pass 30 semester hours in an academic year.

Scholarships

The College of Liberal Arts offers the following scholarships. For additional information, please contact the department which offers the scholarship.

Liberal Arts Alumni Scholarships

The College awards scholarships to deserving and needy students majoring in any of its curricula. Scholarship information is available in the office of the associate dean.

American Institute of Architects Scholarships

The School of Architecture participates in the AIA scholarship program and generally offers three to five of its students an opportunity to apply for AIA Scholarships and Grants. These scholarships are awarded on the basis of need and academic ability, and their amounts vary according to each applicant's particular circumstances.

F. Elizabeth Bethea Scholarship

Established in memory of Ms. Elizabeth Bethea, former head of the School of Art, this scholarship is awarded to a student in art education.

John M. Caldwell Memorial Scholarship in Social Sciences

In honor of Dr. John M. Caldwell, former Social Sciences professor, the scholarship is awarded by the Social Sciences Department faculty on a competitive basis. To be eligible, a student must be a full-time student, enrolled in a curriculum in social sciences (geography, political science, sociology), maintain a 3.0 GPA, and be a senior at the time of the award.

John K. Price Scholarship in Social Sciences

In honor of Dr. John K. Price, former Social Sciences professor, the scholarship is awarded by the Social Sciences Department faculty on a competitive basis. To be eligible, a student must be a full-time student, enrolled in a curriculum in social sciences (geography, political science, sociology), maintain a 3.0 GPA, and have earned at least 75 hours in the curriculum.

Loyd Ray Click Memorial Scholarship

The Shreveport Chapter of the Construction Specifications Institute awards an annual $500 scholarship to a sophomore, junior, or senior student majoring in architecture; interior design; landscaping; civil, mechanical, or electrical engineering; or construction engineering technology. The award is based upon academic excellence, financial need, and character. The Selection Board is composed of an architecture program faculty member, a College of Engineering and Science faculty member, and a member of the Shreveport CSI Chapter.

Mary Alice Posey Garrett English Scholarship

The Department of English offers scholarships to English majors who have demonstrated outstanding academic ability. This scholarship is available to those applicants who major in English and desire to teach English.

CODOFIL Scholarships

Students should consult the Department of Foreign Languages in regard to scholarships for study in French-speaking countries.

Melinda Sue McGee Memorial Endowed Scholarship
The scholarship is awarded annually to a full-time architecture student for his/her year of study. The financial need of the recipient is important, and the scholarship is renewable.

McGinty Undergraduate History Scholarships
In honor of Dr. Garnie W. McGinty, former head of the Department of History at Louisiana Tech University, scholarships are awarded by the department to outstanding undergraduate history majors on a competitive basis. To be eligible for consideration, an incoming freshman must have an ACT score of 26. A student already enrolled at the university must have a GPA of 3.5 or above.

Journalism Department Scholarships
The Department of Journalism offers scholarships for incoming freshmen, awarded on the basis of need, academic ability, and demonstrated interest in the journalistic field. A limited number of scholarships are also provided to upperclassmen -- as finances permit -- on the basis of need, dedication to departmental endeavors, and academic excellence; the amount varies according to individual circumstances.

James E. Smith Band Scholarship
Mr. James E. Smith, former band director at Louisiana Tech and composer of the official fight song "Tech Fight," established this scholarship in memory of his son. The applicant must be a Tech band member of junior status.

Music Department Instrumental Scholarship
The instrumental division offers scholarships to selected instrumental music majors by audition. Students are required to maintain continuous participation in all instrumental major ensembles, maintain a record of superior participation, maintain a 2.5 GPA, and pass 30 semester hours in an academic year.

Music Department Choir Scholarship
The Department of Music offers scholarships to students without regard to their major who are selected to participate in the choir by audition, dependent on available funds.

Music Department Piano Scholarship
The piano division offers scholarships in piano accompanying to selected students by audition, dependent on available funds.

James Edward Skinner Scholarship
The family of James E. Skinner and the Alpha Eta Rho fraternity have established a memorial scholarship in his name. The recipient must have been a professional aviation student for at least one year, must have a minimum grade point average of 2.5, and must demonstrate financial need.

Speech Scholarships
The Department of Speech has a limited number of scholarships for students who participate in the University's speech and debate program.

Gladys B. Moore Speech-Language Pathology Scholarship
This scholarship is awarded to undergraduate students who are majoring in speech-language pathology and who have a 2.5 GPA. Students must be recommended by the faculty and document a financial need for continuing their education in the field of speech-language pathology.

Helen Thompson Drama Scholarship
The Helen Thompson Drama Scholarship is awarded annually by the School of the Performing Arts to an outstanding theatre major who has excelled in the theatre arts. The award was established by the family and friends of Helen Thompson, a talented actress and musician, who did much to promote theatre in north Louisiana.

Merritt Performing Arts Scholarship
Student must be of sophomore standing or higher and must carry a GPA of at least 2.75, and must be active in the performing arts. Selection is by application and interview.

Performing Arts Dorm Scholarship
Full or partial dorm scholarships are available to all performing arts majors. Student must maintain a 2.5 GPA. Selection is by application to the Director of the School of the Performing Arts.

LaVerne E. Irvine Scholarship
Student must be a performing arts major of junior standing and carry a 3.0 GPA. Selection is by application and interview.

Virginia Thompson Women's Department Club Music Scholarship
Student must be a music major carrying a 2.75 GPA. Award is by audition and interview.

Out-of-State Tuition Waivers
Out-of-state tuition waivers are available to students who participate in debate, band, orchestra, theatre, and choir programs. Students must (1) demonstrate high achievement in the appropriate performance area; (2) have a 2.5 cumulative GPA; (3) demonstrate leadership, (4) receive a satisfactory rating in a personal interview; and (5) commit to participate in the appropriate area. Students must also be enrolled for credit in the appropriate activity.

Mabel Anne Walker Harper Piano Scholarship
Student must be a performing arts major carrying a 2.75 GPA. Student must be active in the piano program. .Selection is by application and interview.

Ben Laney Memorial Scholarship
Student must be active in the performing arts and carry a 2.75 GPA. Selection is by application and interview.

Theatre Scholarships
The theatre program has a limited number of scholarships for students interested in the production areas of theatre. Preference is given to theatre majors, but non-majors are also encouraged to apply.

Organizations

Alpha Eta Rho
The Louisiana Tech chapter of the professional international aviation fraternity was chartered in 1970. Membership is open to all students interested in aviation. The purpose of the fraternity is to foster the study of aviation, to encourage scholarship, to further a high standard of aviation ethics, and to promote aviation in the community, state, and country.

American Institute of Architecture Students
The AIAS is a professional voluntary organization whose purpose is to enhance educational opportunities through close liaison and involvement with the architectural profession in the state.

American Society of Interior Designers (Student Chapter)
The Student Chapter of ASID is a professional voluntary organization whose purpose is to enhance educational

opportunities through close liaison and involvement with the interior design profession on a state and national level.

Art and Architecture Student Association

The AASA is a self-assessed, self-governed organization comprised of all art and architecture majors. The AASA's purpose is to enhance educational opportunities by sponsoring workshops, inviting guest speakers, and educational films.

Gamma Theta Upsilon

Gamma Theta Upsilon, a national geography honorary fraternity, is a club open to all geography majors and minors, and other university students interested in geography.

Kappa Kappa Psi

Kappa Kappa Psi, a national honorary fraternity for college band members, is an organization operating exclusively in the field of the University band. The organization provides service to the band department.

Louisiana Tech Flight Team

The flight team represents the university in flight safety competition under the direction of the National Intercollegiate Flying Association. Membership is open to all students possessing a pilot certificate. The team participates in regional and national air competitions annually.

Music Educators National Conference (MENC)

The Music Educators National Conference (Collegiate membership) is a national organization dedicated to the advancement of music education and to professional growth opportunities for its members.

Music Teachers National Association

The Music Teachers National Association Student Chapter at Louisiana Tech University is an organization designed to facilitate the entrance of music students into the world of professional independent music teaching. MTNA promotes communication and service with university, community, and national arts programs.

The Louisiana Tech Chapter of the National Student Speech-Language-Hearing Association (NSSLHA)

Membership in the local chapter of the NSSLHA is open to any undergraduate or graduate student interested in the study of normal and disordered human communication. Pursuing a major in speech-language pathology or audiology is not required for membership. The NSSLHA was founded in 1972.

Phi Alpha Theta

Phi Alpha Theta is the national honor society in history. The objective of Phi Alpha Theta is to promote the study of history by the encouragement of research, good teaching, and the exchange of learning among its members. Any student who has the required grade point average and the prescribed number of hours in history courses may become a member.

Phi Buda Ruda

Phi Buda Ruda is a service fraternity for men and women designed for service to the Louisiana Tech percussion studio and surrounding percussion interests. Membership requires participation in a percussion-related music ensemble.

Phi Mu Alpha

Phi Mu Alpha is a professional music fraternity for men. Its purpose is to meet the creative and performance needs of its members. The local chapter was formed in April 1964. It supplies ushers to LTCA concerts, sponsors the American Music Program, conducts clinics for surrounding schools, sponsors the Jazz Festival, and supports other musical performances.

Pi Delta Phi

Pi Delta Phi is the national French honor society. Its purpose is to encourage the study and appreciation of the French language, literature, and civilization. Activities bring faculty and students together for a variety of programs.

Pi Kappa Delta

Pi Kappa Delta is the nation's largest forensic honorary fraternity, recognizing academic excellence as well as distinction in debate and public speaking. Membership may be earned through participation in the University's speech and debate program or other recognized speech activities.

Sigma Alpha Iota

The international music fraternity for women is Sigma Alpha Iota. It is an organization whose purposes are to foster interest in music and to promote social contact among persons sharing an interest in music. Sigma Alpha Iota strives to promote competency and achievement in music.

Sigma Delta Pi

Sigma Delta Pi is the national Spanish honor society. Its purpose is to encourage the study and appreciation of the Spanish language, literature, and civilization. Activities bring faculty and students together for a variety of programs.

Sigma Tau Delta

Sigma Tau Delta is the national English honor society. Its purpose is to recognize and reward excellence of achievement in English literature and language, to encourage the development of skills in creative or critical writing, and to foster fellowship between students and faculty.

Social Science Organization

The organization is open to students pursuing a major or minor in the area of social sciences (geography, political science, and sociology) or students in general studies with an emphasis in the social sciences. Dues are assessed each quarter.

Society of Professional Journalists

Student memberships are available for journalism and communication majors or minors in the national professional organization the Society of Professional Journalists. Louisiana Tech and Grambling State combine to form the Lincoln Collegiate Chapter. Its purpose is to foster a better understanding of and relationship with professional journalists and the issues they face.

Speech and Debate Club

The Louisiana Tech Speech and Debate Club is open to any Tech student who is interested in improving his/her speaking skills by participating in competitive speech tournaments. The purpose of the organization is to promote excellence in speech skills including debate, discussion, public address, oral interpretation of literature, and other competitive speaking events. Members of the club are required to enroll in Speech 460 and participate in various tournaments held throughout the United States on sponsoring university campuses.

Tau Beta Sigma

Tau Beta Sigma, a national honorary sorority for college band members, is an organization operating exclusively in the field of the University band. The organization provides service to the band department.

Tau Sigma Delta

Tau Sigma Delta is a national honor society for architecture and its related disciplines. The society recognizes outstanding achievement in scholarship and design and promotes excellence in these areas. Membership is by invitation and is dependent on academic status and grade point average.

Tech Communication Association (TCA)

The TCA is a voluntary student organization whose purpose is to facilitate activities and vocational support for those interested in communication professions by sponsoring workshops, inviting guest speakers, and presenting other professional development activities. Membership is open to all University students.

Tech Theatre Players

Founded in 1926, Tech Theatre Players is one of the oldest student organizations on campus. The organization has a long and distinguished record of promoting excellence in the theatre arts. Membership is open to all Tech students who are interested in the theatre arts and who wish to participate in the numerous theatre productions presented each year in the University Theatre.

Departments and Curricula

The College of Liberal Arts includes the School of Architecture, the School of Art, the School of the Performing Arts (theatre and music), the School of Literature and Language (English, foreign languages), and the departments of History, Journalism, Professional Aviation, Social Sciences, and Speech. It offers curricula leading to the degrees of Bachelor of Arts, Bachelor of Interior Design, Bachelor of Architecture, Bachelor of Fine Arts, Bachelor of Science, Bachelor of General Studies, and Associate of General Studies. The College of Liberal Arts also has Divisions of Research and Graduate Studies.

Requirements for Graduation

Candidates for graduation in the College of Liberal Arts must have completed an approved curriculum and must have an average grade of "C" or better on all course credits earned. For those curricula specifying such, the minor subject must be chosen with the approval of the student's advisor before the first quarter of the junior year. Twenty-one semester hours of credit are required for a minor.

Physical education requirements are to be met through physical education activity courses, through equivalent participation in the United States Air Reserve Officers Training Corps program, or through military service. Not more than four semester hours of physical education activity courses will be counted toward degree requirements.

Graduate Programs

Graduate degrees offered by the College of Liberal Arts are as follows:

- **Master of Arts:** English, History, Speech, Speech Pathology and Audiology.
- **Master of Fine Arts:** Studio Art, Graphic Design, Interior Design, Photography.

For admissions, curricula, and other information, consult the Louisiana Tech University Graduate School section of this Bulletin.

Degrees in General Studies

General Studies is a degree program for undergraduate students interested in an interdisciplinary education. It offers students an opportunity to develop critical thinking and cultural awareness through a multi-disciplinary range of courses. It is individualized and flexible, built around a student's career goals and academic status at the time of application to the program.

Associate of General Studies (A.G.S.)

The Associate of General Studies degree requires 63 hours. These include 27 hours for the General Education Requirements, 15 hours in a thematic concentration (Main Campus - arts, humanities, social sciences, natural sciences; Barksdale Campus – business, psychology) and 21 hours in 3 enrichment areas. Information concerning acceptable concentrations is available from the Coordinator of the General Studies Program (main campus), the Director of the Barksdale Program (Barksdale campus), or the office of the Dean of Liberal Arts.

In consultation with an advisor, a plan of study is set up when a student seeks admission to the program.

A 2.5 GPA in the concentration and 2.0 overall GPA are required for graduation.

Associate of General Studies Curriculum (A.G.S.)

Freshman Year	
English (GER)	6
Mathematics (GER)	6
Computer Literacy (GER)	3
Science	3
Humanities	6
Social Science	3
Approved Elective (for Enrichment Blocks)	3
	30
Sophomore Year	
Approved Concentration	15
Approved Electives (for Enrichment Blocks)	18
	33
Total Semester Hours	63

(GER): General Education Requirement (pg. 29)

Bachelor of General Studies (B.G.S.)

The Bachelor of General Studies degree requires a total of 123 semester hours. These hours include the General Education Requirements, a thematic concentration (Main Campus – arts, humanities, social sciences, natural sciences; Barksdale Campus – business, psychology) of 24 hours, and 3 enrichment blocks of 12 hours each. Information concerning acceptable concentrations is available from the Coordinator of the General Studies Program (main campus), the Director of the Barksdale Program (Barksdale campus), or the office of the Dean of Liberal Arts.

In order to receive a Bachelor of General Studies degree, a candidate must have a 2.5 GPA in the concentration, a 2.25 GPA in 45 hours of 300- and 400-level courses (at least 15 hours at the 400 level), and a 2.0 overall GPA.

Interested students should meet with the Coordinator of the General Studies Program on the main campus or the Director of the Barksdale Program on the Barksdale campus. At this time a plan of study will be set up.

Bachelor of General Studies Curriculum (B.G.S.)

Freshman Year	
English (GER)	6
Mathematics (GER)	3
Natural Sciences (GER)	6
Humanities (GER)	9
Social Science (GER)	6
	30
Sophomore Year	
Computer Literacy (GER)	3
Mathematics (GER)	3
Natural Sciences (GER)	3
Arts (GER)	3

Humanities (GER) 3
Social Science (GER) 3
Approved Electives (for Enrichment Blocks) 12

30

Junior Year
Approved Concentration 12
Approved Electives (for Enrichment Blocks) 21

33

Senior Year
Approved Concentration 12
Approved Electives 18

30

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

School of Architecture

The School of Architecture offers the following degrees:

- **Bachelor of Architecture:** (B. Arch. -- an accredited professional degree.) In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture
- **Bachelor of Interior Design:** (B.I.D.)
- **Master of Fine Arts:** (M.F.A.) in Interior Design

The School of Architecture prepares its graduates to become practitioners of architecture and interior design. Consequently, the School assumes the responsibility to admit to its professional degree programs those students who, by past educational preparation and demonstrated capability, are prepared to complete their professional studies at the School's required level of quality.

Therefore, the School of Architecture reviews the applications of all students admitted to the University and the transcripts of those already attending the University who indicate an intention to pursue a professional degree in either architecture or interior design. The review is conducted prior to the beginning of each academic quarter, and based upon the review an entry class is selected for admission to the School of Architecture's professional degree programs.

Information requests and questions regarding the selection criteria may be directed to the Director of the School of Architecture at Louisiana Tech University.

Architecture Curriculum (B. Arch.)

The five-year curriculum in architecture is a first accredited professional degree program and is consequently comprehensive, rigorous, and demanding. It is designed to provide students with a balanced set of educational experiences through which the interrelated influences of history, theory, context, pragma, technology, and practice on the form of the built environment are investigated and, ultimately, understood.

The program leads to the award of the degree of Bachelor of Architecture on completion of its curricular requirements, and this degree is accredited by the National Architecture Accrediting Board. As such the program prepares the student for professional internship and, after completion of the required internship period, the Architects Registration Examination.

Each student majoring in architecture is to complete the curriculum which follows. Students transferring into the program from another accredited institution are required to earn a minimum of 31 credit hours from Louisiana Tech to be eligible for the award of the Bachelor of Architecture degree, and additional course work beyond the 159 hours stipulated in the curriculum may be required in order to meet equivalency requirements.

Bachelor of Architecture (B. Arch.)

Freshman Year - Foundation Level
Architecture 110, 112, 120, 130, 131, 132 12
Natural Sciences (GER)
Biology 3
English (GER) 6
Humanities (GER) 6
Mathematics 101, 112 6

33

Sophomore Year - Foundation Level
Architecture 200, 210, 211, 220, 222, 230, 231, 301 15
Humanities (GER) 6
Natural Sciences (GER)
Physics 6
Directed Elective*** 4

31

Admission to the Professional Concentration is contingent upon satisfactory completion of all required course work at the Foundation Level.

All students entering the Professional Concentration are required to have access to a laptop computer for use in class for written, calculating and graphic work associated with professional area courses.

Junior Year - Professional Concentration
Architecture 221, 300, 310, 311, 320, 331, 421, 471, 474 21
Engineering Technology 301, 306, 326* 7
Craft Elective** 3
Social Sciences (GER) 3

34

Senior Year - Professional Concentration
Architecture 232, 332, 410, 411, 420, 481 16
Construction Engineering Technology 401, 402, 421, 422* 6
Craft Elective** 3
Social Sciences (GER) 6

31

Admission to the Degree Design Project is contingent upon the following: (1) Satisfactory completion of all required course work in the Foundation Level and Professional Concentration of the curriculum. (2) A 3.00 average in Architecture 310, 320, 410, and 420.

Fifth Year - Degree Design Project
Architecture 473, 480, 490, 491 12
Directed Electives*** 18

30

Total Semester Hours 159
(GER): General Education Requirement (pg. 29)

No grade of "D" in architecture courses will apply towards the Bachelor of Architecture degree.

*Course work required to be taken at Grambling State University as part of Inter-institutional Cooperative Program (ICP) agreement.
**Craft electives are to be selected from Architecture 350, Art 240, 241, 346, 347, 390, 391,490, or Interior Design 451.
***Directed electives are to be selected from an approved list of courses associated with the architectural areas of assembly, design and management.

All students are required to acquire a minimum of 400 clock hours of architectural practice experience and/or architecture-related community service after the Foundation Level to satisfy graduation requirements.

Requirements for a Minor in Architecture

A minor in architecture consists of 21 credit hours of architecture course work. The plan of study must include ARCH 131, 211, 222, 231, 321, 331, 402, 411, 450, 471 and 472. Any deviation from this plan of study must be approved by the Director, School of Architecture. All courses applied toward the minor must be completed with the grade of "C" or higher.

Interdisciplinary Minor in Cultural Resources

See Department of History.

Bachelor of Interior Design Curriculum (B.I.D.)

The Interior Design program is designed to prepare aspiring students to take their place as leaders in the design community. It prepares students to accept responsibility for addressing issues and solving complex problems of current and future interior environments. The program is designed to enable students to develop creative imaginations, technical knowledge, graphic communication skills, and business insight. Built on a strong foundation of art and architecture, it is reinforced by courses in liberal arts, business and administration, and applied and life sciences to prepare students to become high quality entry level interior designers upon graduation. The Interior Design program is accredited by the Foundation for Interior Design Education Research (FIDER), and academically prepares the student for the NCIDQ exam enroute to becoming a fully qualified interior designer.

Freshman Year - Foundation Level
Architecture 110, 112, 120, 130, 132 10
English (GER) 6
Humanities (GER)
History 101 and 102 6
Mathematics (GER) 6
Natural Sciences (GER) 3
31

Sophomore Year - Foundation Level
Architecture 210, 211, 220, 222, 230, 231 12
Art 116, 266, 267 9
Interior Design 250, 355, 356 4
Humanities (GER)
Literature 3
Natural Sciences (GER) 6
34

All students entering the Professional Concentration are required to have access to a computer for use in class for written, calculating, and graphic work associated with professional area courses.

All students are required to acquire a minimum of 400 clock hours of interior design practice experience and/or interior design-related community service after the Foundation Level to satisfy graduation requirements.

Junior Year - Professional Concentration
Architecture 232, 332, 474 8
Interior Design 352, 353, 354, 357, 457, 458 16
Humanities (GER)
Speech 110 or 377 3
27

Senior Year - Professional Concentration
Architecture 300, 380 3
Interior Design 452, 453, 454, 456 12
Social Sciences (GER)
Psychology 102, 455 6
Additional Social Sciences Course 3
Directed Elective(s) 4
28

Total Semester Hours 120
(GER): General Education Requirement (pg. 29)

*Directed Electives chosen by student in consultation with advisor.

Requirements for a Minor in Interior Design

A minor in interior design consists of Architecture 211, 222, 231, 402, 450; Interior Design 250, 355, 356, 357, 451, 456, 457, and 458. Any deviation from this plan of study must be approved by the Director, School of Architecture. All courses applied toward the minor must be completed with the grade of "C" or higher.

School of Art

The School of Art offers the following degrees:

- **Bachelor of Fine Arts (B.F.A.):** graphic design, photography, and studio (ceramics, drawing, painting, printmaking, and sculpture concentrations).
- **Master of Fine Arts (M.F.A.):** graphic design, photography, and studio (ceramics, drawing, painting, printmaking, and sculpture concentrations).

School of Art Objectives

The objectives of the School of Art are to prepare students as professional artists and to develop enlightened individuals in the production of art culminating in the Bachelor of Fine Arts and/or Master of Fine Arts degrees. To support these objectives we provide the student with a series of guided experiences in the history of art, the use of materials, the development of a personal aesthetic, and the encouragement of artistic mastery. These objectives should provide our students with the attitudes and skills needed to become mature, self-motivated artists.

Prerequisites

With the exception of art history, courses beyond the basic design and drawing courses have prerequisites as the knowledge gained in each successive course builds on the previous experience. Students who qualify for Advanced Placement Credit will be given credit for art elective courses; however, all students must enroll in the basic design and drawing courses because of the importance of learning the content of these introductory courses.

Senior Exhibit

A senior exhibit is required of all art majors and will be a graded component of their final major studio course. A passing grade in this course is contingent upon a "C" or better grade for the exhibit. The area head assigns this grade.

The following courses (by areas) will serve as the final major studio/exhibit course:

Graphic Design ..... Art 475
Photography ..... Art 474
Studio:
2-D ..... Art 415
3-D ..... Art 415

Bachelor of Fine Arts

This program is designed to develop a deep and lasting appreciation for the visual arts among the students and to train professional artists in their respective fields of study. The candidate for a degree must complete the prescribed General Education Requirements (GER) courses and pass the remaining art courses with no grade below a "C."

Art-Graphic Design Curriculum (B.F.A.G.)

Students entering this field of study will pursue courses in the core curriculum during their freshman year. These include drawing, designing, art history, rendering, and electives of the student's choice as well as the first graphic design class, Art 160. The sophomore, junior, and senior years are spent specializing in the graphic design area. Courses include typography, layout, production techniques, illustration, advertising campaign, and computer graphics. Much of the senior year is directed toward the

preparation of a portfolio which will provide evidence to a potential employer of the graduate's talents and expertise in the graphics and visual communication fields. Upon graduation students are qualified to perform professionally in a wide variety of graphic-related industries: print advertising, newspaper, magazine and book publishing, specialized studios, among other related activities.

All students enrolled in Art 260 must have Macintosh laptops. Specific descriptions of the laptop are available on our web site (www.art.latech.edu)

Freshman Year
Art 115, 116, 118, 119, 125, 126,160 21
English (GER) 6
Mathematics (GER)
Mathematics 101, 125 6
33

Sophomore Year
Art 260, 261, 262, 263 12
Art 266, 267 6
Natural Sciences (GER) 9
Humanities (GER)
Speech 110 or 377 3
Art Elective 3
33

Junior Year
Art 360, 361, 362 (6) 12
Art 225 or 228 3
Art Elective 3
Humanities (GER)
English 201 or 202 3
Social Sciences (GER) 9
Graphic Design Elective 3
33

Senior Year
Art 363, 464, 475 9
Art 462 3
Art History Elective 3
Graphic Design Elective 3
Humanities (GER)
History 3
Additional Humanities Course 3
24

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Art-Photography Curriculum (B.F.A.P.)

In the photography program, students are involved in a common curriculum with other art majors. The emphasis is on the use of photographic materials as a means of self-expression and discovery. Technical skill is taught. However, the primary intent of the program is to examine the impact photography has on the individual, the community, and society as a whole.

Through lectures, demonstrations, practical lab work, and problem solving, students develop into well-rounded artists and craftsmen. The equipment and facilities provided by the program allow the student an opportunity to master the various tools and techniques of photography.

Freshman Year
Art 115, 116, 117, 118, 125, 126, 170, 173 24
English 101 (GER) 3
Mathematics (GER)
Mathematics 101, 125 6
33

Sophomore Year
Art 220, 270, 271, 370 12
Art 266, 267 6
English 102 (GER) 3
Natural Sciences (GER) 9
Humanities (GER)
Speech 110 or 377 3
Art History Elective 3
36

Junior Year
Art 372, 373, 374 9
Art 472 3
Art Elective 6
Social Sciences (GER) 9
27

Senior Year
Art 415(6), 473, 474 12
Art Elective 6
Humanities (GER)
English 201 or 202 3
History 3
Additional Humanities Course 3
27

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Art-Studio Curriculum (B.F.A.S.)

The Studio program provides areas of concentration in ceramics, drawing, painting, printmaking, and sculpture. During their freshman and sophomore years, Studio majors are involved in a common curriculum. The junior and senior years consist of a flexible curriculum that is primarily structured around studio assignments and individual criticism coupled with group lectures and seminars. The emphasis is one the use of materials as a means of self-expression. Technique is studied as an important aspect of art training. However, in a deeper sense, the intent of the program is to examine the reasons art is made and how art impacts the lives of those who make it as well as those who view it.

Learning methods of solving visual problems, students develop into well-rounded artists and craftsmen. The equipment provided by the program allows students an opportunity to master the various tools and techniques available to the artist.

Freshman Year
Art 115, 116, 117, 118, 125, 126 18
English (GER) 6
Mathematics (GER)
Mathematics 101, 125 6
Humanities (GER)
Speech 110 or 377 3
33

Sophomore Year
Art 220, 225, 228, 240 or 241, 331, 390 18
Art 266, 267 6
Art History Elective 3
Natural Sciences (GER) 9
36

Junior Year
Art Major Studio 12
Social Sciences (GER) 9
Humanities (GER)
English 201 or 202 3
Additional Humanities Course 3
27

Senior Year
Art Major Studio 9
Art 473 3

Art Elective 9
Art History Elective 3
Humanities (GER)
History 3

27

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Requirements For a Minor In Art

For a minor, 40 to 60 percent of the 21-hour requirement must be at the 300-level or above. The following courses will constitute an art minor: Art 115, 125, 468, and art electives with 9 to 12 hours at the 300- or 400- level. Prerequisites may necessitate more hours than the minimum 21 specified. In Graphic Design, the following courses will constitute a minor: Art 115, 125, 160, 260, 261, 262, or 263, and 468 plus the requisite 300- 400- level courses. Course work for a photography or studio minor will be determined upon interview with the curriculum advisor. All courses applied toward the minor must be completed with the grade of "C" or higher.

Interdisciplinary Minor in Cultural Resources.

See Department of History.

Bachelor Of Arts In Art Education

See College of Education.

School of Literature and Language

Department of English

Placement in English

Placement in entry-level college English courses is based on the English score on the American College Test (ACT) or the Scholastic Aptitude Test (SAT). If no scores are on file at the time of advising, the scores will be assumed to be 0. The ACT English or SAT Verbal score is used as a means of determining the degree of preparation in English. The placement procedure, outlined below, ensures that each entering student will begin his or her study of English at the highest level for which he or she is prepared at the time he or she enters Louisiana Tech.

ACT ENGLISH/SAT VERBA SCORE	COURSE PLACEMENT
0-16 ACT ENGLISH 0-420 SAT VERBAL	Must enroll in English 099
17-18 ACT ENGLISH 430-450 SAT VERBAL, or successful completion of English 099	English 100*
19 or higher ENGLISH ACT 460 or higher SAT VERBAL	English 101

*English 100 serves as a replacement for English 101 for students required to enroll in English 100.

Transfer Students

Transfer students should follow the same placement guidelines as detailed above.

Spring Testing

High school students with an ACT English score greater than or equal to 26 or a SAT verbal score greater than or equal to 590 who have not had any college-level English courses, and who successfully pass the test for English 101 during Spring Testing, will receive credit for English 101 and be placed directly into English 102.

Credit Examination

All students with an ACT English score greater than or equal to 26 or a SAT Verbal score greater than or equal to 590, who have not had any college-level English courses, can take a credit exam for English 101 offered through the Department of English at the beginning of each quarter.

Requirements for a Major in English

Students in the Department of English are required to follow the curriculum for the major in English leading to the degree of Bachelor of Arts in English. A major in English consists of 30 semester hours, 6 hours of directed electives, and an approved minor of 21 hours for a minimum total of 123 semester hours. English majors must have a 2.0 earned grade point average for graduation and no grade lower than a "C" in any required English class.

English Curriculum (B.A.)

Freshman Year
English (GER) 6
English 201 or 202 3
History 101, 102 6
Mathematics (GER) 6
Natural Sciences (GER) 3
Social Sciences (GER) 6

30

Sophomore Year
English 201 or 202 3
Foreign Language* 6
History 201 or 202 3
Computer Literacy (GER)** 3
Natural Sciences (GER) 6
Humanities (GER)
Speech 110, 211, or 377 3
Social Sciences (GER) 3
Elective 3

30

Junior Year
Arts (GER) 3
English 303 or 336 3
English 438, 439, or 440 3
English 410, 411, 412, 413, 414, or 455 3
English 401, 409, 416, 417, 424, 429, or 430 3
Foreign Language* 6
Electives 12

33

Senior Year
English 403 or 404 3
English 415 3
Electives 18
Directed Electives*** 6

30

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)
*Must be in the same language
**Computer Science 100, Merchandising & Consumer Studies 246, Education 245 or 445, or any computer language course (e.g. COBOL, FORTRAN). Education 310 is not acceptable.
***Six (6) hours should be chosen as Directed Electives from two of three areas:

- **Technology:** Education 447 or 448; English 303, 463, or 480
- **Multi/cross culturalism:** English 482, Russian 425, Spanish 426 or 427, French 428, English 406
- **Language & Communication:** Education/ESL 454 or 493, English 332 or 422, English/Foreign Languages 470, or English 470.

Requirements For a Minor in English

A minor in English consists of 21 semester hours of English courses. The plan of study must include English 101, 102, 201, 202, 415, and six additional 300/400-level semester hours of English. All courses applied toward the minor must be completed with the grade of "C" or higher.

Requirements for a Minor in Technical Writing

A minor in Technical Writing consists of 21 semester hours of English courses. The study plan must include English 101, 102, 201 or 202, 303, and nine additional hours of 300/400-level semester hours of any courses listed in the Technical Writing concentration. All courses applied toward the minor must be completed with the grade of "C" or higher.

Interdisciplinary Minor in Cultural Resources.

See Department of History.

Requirements for a Concentration in Technical Writing

No later than the end of the sophomore year, students wishing to pursue a concentration in Technical Writing leading to the degree of Bachelor of Arts in English are required to declare their intention. Those choosing the Technical Writing concentration must include in their study plan English 101, 102, 201 or 202, 303, 459 or 463, 460, 461 or 468, 462, 464 or 469, 465 and an approved technical specialization area of 21 hours for a minimum total of 123 semester hours. English majors with a concentration in Technical Writing must have a 2.0 earned grade point average for graduation and no grade lower than a "C" in any required English class.

Department of Foreign Languages

Credit/Placement Examination

Students may earn credit for beginning and intermediate foreign language courses (100 and 200 level) by passing credit/placement examinations. Students with three or more years of high school credit and native speakers should consult the department office before registration. Only native speakers majoring in a language will be permitted to take credit exams for French or Spanish 301 or 302.

The foreign language credit/placement examinations are scheduled to be given each quarter on the two days preceding the first day of class. The exact time, place, and date of the examinations are listed on the calendar page of the quarterly class schedules. Students register for a credit/placement exam by enrolling in the E01 section of the appropriate 100 or 200 level course. Students may arrange for a credit exam by special appointment during the quarter but at an additional cost.

Students who have already completed credits in a foreign language must not enroll in an elementary class in that language without first taking the appropriate credit/placement examination. All native speakers of languages other than English must consult the department office before enrolling in classes in their language. Students are urged to complete the foreign language requirement for the REGENTS' CERTIFICATE OF EXCELLENCE through credit examination and classwork.

Foreign Language Requirement

All students are advised to complete a year's sequence of their foreign language courses without unnecessary interval between courses. Regulations require completion of a language requirement in the same language.

Majors and Minors

Minors in French, German, Russian, and Spanish consist of 21 hours in those languages. Majors in French and Spanish consist of 30 hours above the 100 level. These programs lead to Bachelor of Arts degrees in French and Spanish, respectively. Students pursuing these majors should consult with the department office concerning specific plans available for use of electives, minors, and second areas to strengthen their major and career plans.

Study Abroad

Study opportunities abroad are offered to students of French, German, Russian, and Spanish. Through the university's membership in the CODOFIL Consortium, French students may choose from a variety of programs in Quebec, Belgium and France. Spanish, Russian and German students participate in study abroad programs conducted by other U.S. institutions.

English as a Second Language (ESL)

The Department of Foreign Languages offers special programs in English as a Second Language for groups of 10 or more participants. Such programs are conducted under contract and may last from 2 to 12 weeks or longer.

French Curriculum (B.A.)

Freshman Year	
English (GER)	6
French 201, 202	6
Mathematics (GER)	6
Natural Sciences (GER)	6
English 201 or 202	3
Electives*	3
	30
Sophomore Year	
Computer Literacy (GER)**	3
French 301, 302, 304	9
Humanities (GER)	6
Electives*	6
Natural Sciences (GER)	3
English 201 or 202	3
Social Sciences (GER)	3
	33
Junior Year	
French 305	3
French (upper division)	6
Humanities (GER)	6
Social Sciences (GER)	6
Electives*	9
	30
Senior Year	
Arts (GER)	3
French 450, 470	6
Electives*	18
Directed Electives ***	3
	30
Total Semester Hours	123

(GER): General Education Requirement (pg. 29)

As the scheduling of upper-division French courses is determined by changing enrollment patterns, students who plan to complete their degree within the shortest time possible may have to take one or more French courses through the Inter-Institutional Cooperative Program (ICP) at Grambling State University.

French 101 and 102 may be used as freshman electives only if the student does not qualify for French 201 upon entering.

*All or part of the 36 hours of electives may be dedicated to a second major, or 21 of them may be dedicated to a minor.
**Computer Information Systems 101 or Education 245.
***The Directed Elective may be chosen from one of two areas:

- **Language & Culture Studies:** English as a Second Language 454, 460, 470, or 493; English 422; English/Foreign Languages 470; Speech 222, 430, or 440.;
- **Area Studies:** History 413, 414, 418, 419, 420, 440, 441, 442, or 444; Economics 344; Political Science 325 or 350.

Spanish Curriculum (B.A.)

Freshman Year	
English (GER)	6
Spanish 201, 202	6
Mathematics (GER)	6
Natural Sciences (GER)	6
English 201 or 202	3

Electives* 3

30

Sophomore Year
Computer Literacy (GER)** 3
Spanish 301, 302, 380 9
Humanities (GER) 6
Electives* 6
Natural Sciences (GER) 3
English 201 or 202 3
Social Sciences (GER) 3

33

Junior Year
Spanish 381 3
Spanish (upper division) 6
Humanities (GER) 3
Social Sciences (GER) 6
Electives* 12

30

Senior Year
Arts (GER) 3
Spanish 450 3
Spanish (upper division) 3
Electives* 18
Directed Elective*** 3

30

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

As the scheduling of upper-division Spanish courses is determined by changing enrollment patterns, students who plan to complete their degree within the shortest time possible may have to take one or more Spanish courses through the Inter-Institutional Cooperative Program at Grambling State University.

Spanish 101 and 102 may be used as freshman electives only if the student does not qualify for Spanish 201 upon entering.

*All or part of the 36 hours of electives may be dedicated to a second major, or 21 of them may be dedicated to a minor.
**Computer Information Systems 101 or Education 245.
***The Directed Elective may be chosen from one of two areas:

- **Language & Cultural Studies:** English as a Second Language 454, 460, 470, or 493; English 422; English/Foreign Languages 470; Speech 222, 430, or 440;
- **Area Studies:** History 413, 414, 418, 419, 420, 440, 441, 442, or 444; Economics 344; Political Science 325 or 350.

Department of History

Requirements For a Major

Thirty semester hours in history, as specified in the curriculum below, constitute a major in the Department of History. Every history major must have a minor, normally 21 hours in a related field, chosen in consultation with his or her advisor and, if necessary, the head of the department in which the student wishes to minor. Every major will consult with his or her advisor during each registration period and throughout the term as need arises. This program leads to the degree of Bachelor of Arts.

The Garnie W. McGinty Chair of History, endowed in 1977 by Dr. G. W. McGinty, former head of the History Department, is currently occupied by a member of the department. The McGinty Trust Fund also enables the department to publish scholarly historical works and to award scholarships to qualified students. The department also sponsors the American Foreign Policy Center.

History Curriculum (B.A.)

Freshman Year
English (GER) 6
Mathematics (GER) 6
History 101, 102 6
Humanities (GER)
Speech 110 or 377 3
Foreign Language* 9

30

Sophomore Year
Humanities (GER)
English 201, 202 6
History 201, 202 6
Foreign Language* 3
Sociology 201 3
Geography 3
Computer Literacy (GER)** 3
Natural Sciences (GER) 6
Arts (GER) 3

33

Junior Year
History (300 or 400-level courses) 9
Natural Sciences (GER) 3
Social Sciences (GER)
Political Science 201 and one other 6
Economics 215 3
Minor 9

30

Senior Year
History (300 or 400-level courses) 9
Geography Elective 3
Minor 12
Electives 6

30

Total Semester Hours 123
(GER): General Education Requirements (pg. 29)

*Twelve (12) hour foreign language requirement must be in the same language.
**Computer Information Systems 101, or Merchandising & Consumer Studies 246, or Computer Science 100.

Requirements For a Minor in History

History 101, 102, 201, and 202 plus nine hours of advanced history taken during the junior and senior years constitute a minor. All courses applied toward the minor must be completed with the grade of "C" or higher.

Interdisciplinary Minor in Cultural Resources

The Interdisciplinary Minor in Cultural Resources is a program of study in material culture and folk culture, combining courses in archaeology, architecture, art history, and other related fields. Course offerings cover content, theory, method, and techniques of research, documentation, and preservation. This minor is well suited for students who wish to enrich their personal background in the arts, humanities, and social sciences, or wish to prepare for careers or post-graduate study in arts and culture administration, museum studies, applied history, historical preservation, and archives and records management.

The minor consists of 21 hours, to include a concentration in either Group I or Group II, below. All courses applied toward the minor must be completed with the grade of "C" or higher. A concentration must be at least 9 hours but no more than 15 hours. The remaining hours may be chosen from the opposite group and/or from Group III.

Group I: Archaeology 401, 410, 420, 462, 463, 464, 466.
Group II: Architecture 211, 222, 231, 321, 331, 472; Art 266, 267, 466, 467, 468, 469, 472.
Group III: English 470, 421, 422, 482; Geography 205, 210, 290.

At least 12 hours must be chosen from courses numbered 300 or above.

Hours counted toward a student's major may not be counted toward the Interdisciplinary Minor in Cultural Resources.

Department of Journalism

Requirements for a Major

The 31 semester hours required for a major in journalism are Journalism 101-102, Journalism 310-311, Journalism 320 and Journalism 400, and 13 hours in advanced courses numbered in the 300 and 400 series, including a total of 8 hours of Journalism 350, 353 and 355. This program leads to the degree of Bachelor of Arts. For a minor, journalism students must complete 21 hours in an additional area. Internships are available at newspapers, magazines, public relations firms, and radio and TV stations.

Journalism Curriculum (B.A.)

Freshman Year
Journalism 101, 102, 320 9
English (GER) 6
Mathematics (GER)
Mathematics 101 & 125, or 111 & 112 6
Humanities (GER)
History 201, 202 6
Speech 110 3
Elective 1
31

Sophomore Year
Journalism 310, 311, 350, 353 10
Humanities (GER)
English 201, 202 6
Foreign Language* 6
Natural Sciences (GER) 3
Minor 6
31

Junior Year
Journalism 353, 355 4
Journalism Elective 3
Foreign Language* 6
Natural Sciences (GER) 6
Social Sciences (GER)
Geography 203, 205, or 210 3
Political Science 201 3
Minor 6
31

Senior Year
Journalism 400 3
Journalism Elective 2
Arts (GER) 3
Social Sciences (GER)
Economics 215 3
Minor 9
Electives 11
30

Total Semester Hours 124
(GER): General Education Requirement (pg. 29)
*Twelve (12) hour foreign language requirement must be in the same language.

Requirements for a Minor in Journalism

For students in other departments, Journalism 101, 102, 310, 320 and 9 hours of advanced journalism courses, numbered in the 300 and 400 series, including any two courses in practical journalism, will constitute a minor in journalism.

A minor in journalism can be useful for students in other academic areas who wish to enhance their writing and communication skills. All courses applied toward the minor must be completed with the grade of "C" or higher.

The University Newspaper

Practical experience in newspaper work is afforded the journalism students through their work as staff members of The Tech Talk, the University newspaper. In addition to their editorial work on the newspaper staff, the journalism students are encouraged to gain experience through page make-up, etc.

Journalism Department Scholarships

Freshman Scholarships - a number of incoming freshman scholarships are available.
Student Publication Service Scholarships - these scholarships are service-based and are awarded basically to editors of The Tech Talk.
Other scholarships are available as finances permit.

School of the Performing Arts

Objective

The School of the Performing Arts has as its primary purpose the education of students for careers as performers, teachers, and scholars in the performing arts fields of theatre, music, dance, and theatre management. It also recognizes the interrelationships of the academic disciplines and provides instruction in the performing arts as a humanistic study. Further, the School endeavors to meet its obligations of service and assistance to its various communities, both within and beyond the University environment. The School is dedicated to the advancement of performing arts culture both in the academic setting and in society.

Degrees

The School of the Performing Arts offers the following degrees:

Department of Music

- **Bachelor of Music Degree in Performance:** This curriculum is designed for those who are interested in the performing and pedagogical aspects of their training in any major: percussion, guitar, voice, keyboard, woodwinds, brass or strings.
- **Bachelor of Arts Degree in Music:** This curriculum is designed for the student who desires a liberal arts education with a concentration in music.
- **Bachelor of Arts Degree in Education with major in Music:** See College of Education.
- **Music minor:** A minor in music is designed for those who have a strong interest in music as a secondary subject.

Department of Theatre

- **Bachelor of Arts in Speech with a concentration in Theatre:** The theatre curriculum consists of theatre courses within the Speech Department. The degree is designed for those interested in the performance, technical, and management aspects of theatre training within a liberal arts education.
- **Bachelor of Arts Degree in Education with major in Speech and a concentration in Theatre.** See College of Education.
- **Master of Arts in Speech with a concentration in Theatre.** This curriculum emphasizes the study of performance on practical and theoretical levels.
- **Theatre minor:** A minor in theatre is designed for those who have a strong interest in theatre as a secondary subject.

Department of Music

The primary purpose of the Department of Music, accredited through the National Association of Schools of Music, is to provide its students with well-rounded preparation for the professional and teaching careers within the many branches of music. The Department strives to combine the high standards of performance characteristic of the conservatory, the scholarly approach to music of the academically oriented university, and the

proficiency in pedagogical skills and educational research associated with the leading teacher training institutions, as well as rendering service to the university, local and state communities. The specific department objectives (as set forth in the Louisiana Tech University Department of Music Handbook and curriculum guides) are designed to meet certification requirements as established by the Louisiana Board of Regents.

The basic objectives of the Department of Music are:

- To assist students in becoming competent, qualified musicians by providing quality instruction and programs in music.
- To provide a variety of experiences which will prepare prospective musicians/music teachers to assume their professional roles in the fields of music performance and/or music education.
- To provide educational experiences which will develop the individual's knowledge in both breadth and depth.
- To provide consultation service, workshops, seminars, and extension programs for teachers, administrators, school boards, and other community members interested in the development of music and music education through lecture/demonstrations, clinics, recital programs, and adjudicators for district and state music festivals.
- To evaluate on a continuing basis the curricula, course offerings and services of the Department of Music in light of new knowledge, career requirements, and opportunities for college graduates.

The accomplishment of this mission and achievement of these objectives are the ongoing endeavors of the faculty and staff of the Department of Music. For further details, visit the Department of Music website at **http://performingarts.latech.edu** or contact the Coordinator of Music.

Requirements for Admission and Degrees

Entering first-year and transfer music majors are required to audition in the major performance medium prior to acceptance. The audition may be on site or via recording. Contact the Coordinator of Music for further details.

A music theory placement exam is given to new music students. All students are enrolled in either the College of Liberal Arts or the College of Education (Music Education majors), and, as music majors, follow the appropriate curriculum corresponding to the academic year of entry. Transfer credit will be evaluated for placement in music curricula. In addition to the completion of the requirements of the degrees, students must complete the University's general education requirements (GER).

Requirements for Music Majors

Students selecting a music major will be expected to:

- Select a major instrument from the following: brass, woodwinds, percussion, guitar, keyboard, strings or voice.
- Maintain a 2.5 cumulative GPA in music.
- Receive a grade of C or better to progress through the sequence of music theory classes.
- Pass a proficiency test in piano by the end of the sixth quarter of study. Failure to do so may interrupt matriculation toward a degree.
- Enroll in and complete 10 quarters of MUAP 100 -- Recital Hour.
- Attend specified departmental and School of the Performing Arts performances each quarter.
- Perform during Recital Hour: BM majors, 3 times each academic year; BA and BA/Music Ed majors, 2 times each academic year. In all cases, only one chamber ensemble performance may be counted.
- Enroll in a major ensemble each quarter (except students participating in student teaching). Major ensembles include Concert Choir, Wind Ensemble, Chamber Singers, Concert Band, Chamber Orchestra, and Marching Band.
- Participate in juries at the end of each quarter, as required by the individual studio.
- Apply for upper division status after six quarters of study. (See private teacher for form.) Prerequisites: Pass all parts of the proficiency exam in piano; vocal majors must pass all three diction courses.
- All graduating seniors must complete the major field area test. (See Coordinator of Music for details.)

Transfer students intending to major in music must audition for the specific area faculty and show evidence of successful completion of proficiency exams in piano, music theory, and music history. Students transferring majors within the Department (BM to BA, flute to clarinet, etc.) must audition for the new major and adopt the requirements of the new curriculum

It is reasonable to assume that a music student accepts full responsibility for knowing the policies and regulations of the School of the Performing Arts and Department of Music requirements relevant to his or her individual degree program.

Requirements for a Minor in Music

The Music Minor Program is designed for qualified students who have a strong interest in music as a secondary subject. Students desiring to pursue a music minor must meet with a Music Department advisor for specific details and to fill out appropriate paperwork. The minor consists of 21 hours as follows: Music Theory 101, 102, 103 - six (6) hrs; Major Ensemble (Band or Choir) - one (1) hr; Music Applied (MUAP Private Lesson) - four (4) hrs (must be from one area); MUPD 300 - one (1) hr; MUGN 290 - three (3) hrs; music electives - six (6) hrs to be selected from: MUHS 304 (3), 305 (3), 410 (3), 430 (3), 431 (2), 432 (3), 433 (3), or other music courses selected in consultation with the music advisor. This minor does not meet teacher certification requirements. All courses applied toward the minor must be completed with the grade of "C" or higher.

Ensembles

All music department ensembles are open to qualified students regardless of major. Membership is by audition and can be arranged by contacting the appropriate director or conductor. Additional information can be found at **http://performingarts.latech.edu**

- **Vocal Ensembles:** University Concert Choir, Chamber Singers; Gospel Choir; Opera Workshop.
- **Instrumental Ensembles:** Marching Band of Pride; "Hoop Troop"; Symphonic Wind Ensemble; University Concert Band; University Jazz Ensemble; Percussion Ensemble; Brass Choir; Woodwind Choir; Chamber Orchestra; Guitar Ensemble; various chamber ensembles.

Bachelor of Music in Music Performance (B.M.) Curriculum

This curriculum is designed for those who are interested in the performing and pedagogical aspects of their training in their major instrument. All majors are required to take a minimum of three quarters of a foreign language. Each student must confer once each quarter with his/her advisor to check on academic status and to plan future work. See the Music Department Handbook for upper division requirements in applied music.

Freshman Year

Computer Literacy (GER)	
Music Technology 301	3
English (GER)	6
Mathematics (GER)	
Mathematics 101, 125	6
Music Theory 101, 102	4
Music Applied - Major	3

Music Ensembles - Major 3
Music Applied 100 (3 quarters) 0
Social Sciences (GER) 3
Elective 1

29

Sophomore Year
Music Theory 103, 201, 202 6
Music Pedagogy 300 1
Music Pedagogy 301 or 302 2
Music Applied - Major 6
Music Applied - Minor 3
Music Ensembles - Major 3
Music Applied 100 (3 quarters) 0
Humanities (GER)
Speech 110 or 377 3
History 101, 102, 201, or 202 3
Natural Sciences (GER) 6

33

Junior Year
Music Theory 330 or 370 2
Music Theory 302 3
Music Theory 203 2
Music Theory Elective 3
Music History 304, 305 6
Music Applied - Major 6
Music Applied - Minor 2
Music Applied 399 (Undergrad Recital) 0
Music Applied 100 (3 quarters) 0
Music Ensemble - Major 3
Natural Sciences (GER) 3
Foreign Language 6

36

Senior Year
Music Theory 301, 401 3
Music Applied - Major 6
Music Applied - Minor 2
Music Applied 499 (Undergrad Recital) 0
Music Applied 100 (1 quarter) 0
Music Ensemble - Major 3
Music Pedagogy 4
Social Sciences (GER) 6
Humanities (GER)
Foreign Language 3
English 201 or 202 3

33

Total Semester Hours 131
(GER): General Education Requirement (pg. 29)

Bachelor of Arts in Music (B.A.) Curriculum

The Bachelor of Arts in Music curriculum is designed for the student who has a strong interest in music and also wishes to pursue a minor in another area. For their minor, music students will take 21 hours in:

a) another subject (as outlined in this Bulletin) or
b) Music with an emphasis in theory, history, applied, pedagogy, and/or ensemble.

Music students may also elect to not have a minor. Minor plans must be approved by the Music advisor and Coordinator of Music and should be based on the individual needs of the student. In addition to their major and minor, they will complete the rest of the work indicated in the curriculum below.

Freshman Year
Computer Literacy (GER)
Music Technology 301 3
English (GER) 6
Mathematics (GER)
Mathematics 101 3
Humanities (GER)
History (201 or above) 3
Music Theory 101, 102 4
Music Applied - Major 3
Music Applied - Minor 3
Music Ensembles - Major 3
Music Applied 100 (3 quarters) 0
Natural Sciences (GER) 3
Elective 1

32

Sophomore Year
Music Theory 103, 201, 202 6
Music Applied - Major 3
Music Ensembles - Major 3
Music Applied 100 (3 quarters) 0
Mathematics (GER)
Mathematics 125 3
Humanities (GER)
Speech 110 or 377 3
Natural Sciences (GER) 3
Social Sciences (GER) 3
Minor Electives 9

33

Junior Year
Music Theory 203 2
Music History 304, 305 6
Music Applied - Major 3
Music Applied - Minor 1
Music Applied 399 (Undergrad Recital) 0
Music Applied (3 quarters) 0
Music Ensemble - Major 3
Humanities (GER)
English (201 or above) 3
Foreign Language 6
Minor Subject 9

33

Senior Year
Music Applied - Major 3
Music Applied 100 (3 quarters) 0
Music Applied 399 (Undergrad Recital) 0
Music Ensemble - Major 3
Music Elective 3
Social Sciences (GER) 6
Natural Sciences (GER) 3
Humanities (GER)
Foreign Language 6
Minor Subject 3

27

Total Semester Hours 125
(GER): General Education Requirement (pg. 29)

Department of Professional Aviation

The Professional Aviation curriculum combines flight training with both aviation technical courses and non-aviation University studies. The department offers two Bachelor of Science degrees: professional aviation and aviation management.

Requirements for Admission

The student must pass an appropriate physical examination administered by a Federal Aviation Administration designated medical doctor.

Requirements for a Major in Professional Aviation

A major in Professional Aviation consists of 53 semester hours of aviation courses. Every professional aviation major must have an approved minor, 21 semester hours minimum (or possess an associate degree). Students are encouraged to select a minor that will provide a career enhancement option. This minor will be declared by the beginning of the junior year.

Professional Aviation Curriculum (B.S.)

Freshman Year
English (GER) 6
Mathematics (GER)
  Mathematics 101 & 212 6
Humanities (GER)
  English 201 or 202 3
Social Science (GER)
  Psychology 102 3
Social Sciences (GER) 3
Professional Aviation 101, 102, 110, 111, 208 10

31

Sophomore Year
Humanities (GER)
  History 201 or 202 3
Natural Sciences (GER)
  Physics 205, 206 6
Professional Aviation 239, 240, 241, 242, 243 10
Professional Aviation 200 3
Arts (GER) 3
Social Science (GER) 3
Directed Elective 3

31

Junior Year
Humanities (GER)
  English 303 3
  Speech 377 3
Professional Aviation 303, 322, 331 8
Professional Aviation 340, 341, 342, 343, 344 8
Minor Field 9

31

Senior Year
Natural Sciences (GER)
  Biological Science 3
Professional Aviation 400, 410, 411, 414 7
Professional Aviation 419, 491, 495 7
Minor Field 12
Directed Elective 3

32

Total Semester Hours 125
(GER): General Education Requirement (pg. 29)

With department head approval, Professional Aviation 496, Internship in Aviation, may be substituted for appropriate upper division professional aviation courses in a declared aviation minoir.
*Directed Elective chosen from Professional Aviation courses by student in consultation with advisor.

Requirements for a Major in Aviation Management

A major in Aviation Management consists of 33 semester hours of aviation courses to include a Private Pilot Certification in addition to an intensive and directed curriculum of business and psychology courses designed to prepare students for managerial positions in the aviation industry. The focus is on flight operations management. The aviation management curriculum does not require a minor.

Aviation Management Curriculum (B.S.)

Freshman Year
English (GER) 6
Mathematics (GER)
  Mathematics 101 3
Natural Sciences (GER)
  Biological Science 101 3
Social Science (GER)
  Psychology 102 3
Political Science 201 3
Computer Information Systems 201 3
Professional Aviation 101, 102, 110, 111, 208 10

31

Sophomore Year
Humanities (GER)
  History 201 or 202 3
Humanities (GER)
  English 201 or 202 3
Natural Sciences (GER)
  Physics 205 and 206 6
Social Science (GER)
  Sociology 201 3
Fine Arts (GER) 3
Psychology 202 3
Mathematics (GER)
  Mathematics 212 3

Directed Elective 3
Professional Aviation 223 3

30

Junior Year
Humanities (GER)
  English 303 3
  Speech 377 3
Management 310, 333 6
Quantitative Analysis 233 3
Professional Aviation 303, 315, 320, 322, 332, 440 17

32

Senior Year
Speech 431 or 433 3
Psychology 487 or 465 3
Computer Information Systems 323 3
Management 447, 470 6
Professional Aviation 407, 490, 491 9
Professional Aviation 495 & (496 or 498) 6

30

Total Semester Hours 123
GER): General Education Requirement (pg. 29)

With Department Head approval, Professional Aviation 496 (Internship in Aviation) may be substituted for appropriate upper division professional aviation courses.

Requirements for a Minor: Non-Professional Aviation Majors

Non-aviation majors may obtain a minor in Professional Aviation. This minor consists of completion of the requirements for a Private Pilot Certificate plus 13 semester hours of upper-level aviation courses approved by an advisor. All courses applied toward the minor must be completed with grade of "C" or higher.

Requirements for a Minor: Professional Aviation Majors

Aviation Management minor: This minor consists of 21 hours of aviation management courses and credit for an approved management internship. All courses applied toward the minor must be completed with grade of "C" or higher.

Special Flight Fees

Additional fees are required for each flight course. A schedule of these fees can be obtained by writing the Department, or at www.aviation.latech.edu .

Department of Social Sciences

Requirements For a Major

Thirty semester hours of prescribed courses in geography, political science, or sociology constitute a major in those subjects in the Department of Social Sciences. Minor requirements are determined by the department in which it is offered. Every

department major will consult with his/her advisor during each registration period and throughout the term as necessary.

The degree of Bachelor of Arts is conferred upon completion of any of the curricula: geography, political science, and sociology.

Geography Curriculum (B.A.)

Freshman Year
English (GER) 6
Humanities (GER)
- English 201 3
- History 101, 102 6
- Speech 110 3

Mathematics (GER)
- Mathematics 101 3
- Statistics 200 3

Geography 203, 205 6

30

Sophomore Year
Natural Sciences (GER)
- Geology 111 3

Natural Sciences (GER) 3
History 201, 202 6
English 202 3
Foreign Language 6
Geography 210 3
Geography Electives 6

30

Junior Year
Arts (GER) 3
Natural Sciences (GER)
- Biological Science 3

Social Sciences (GER)
- Economics 215 3
- Political Science 201 3
- Sociology 201 3

Foreign Language 6
Geography Electives 9

30

Senior Year
Computer Literacy (GER) 3
Geography Electives 6
Sociology Elective 3
Political Science Elective 3
Electives 18

33

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Political Science Curriculum (B.A.)

Freshman Year
English (GER) 6
Humanities (GER)
- English 201 3
- History 101, 102 6
- Speech 110 3

Mathematics (GER)
- Mathematics 101 3
- Statistics 200 or Mathematics 125 3

Social Sciences (GER)
- Geography 3

Natural Sciences (GER) 3
History 201 3

33

Sophomore Year
Arts (GER) 3
Elective 3
English 202 3
Foreign Language 6
History 202 3
Natural Sciences (GER) 3
Political Science 201, 302 6
Political Science Elective 3

30

Junior Year
Natural Sciences (GER) 3
Social Sciences (GER)
- Economics 215 3
- Sociology 201 3

Sociology Elective 3
Foreign Language 6
Philosophy 3
Political Science 345 3
Political Science Electives 6

30

Senior Year
Computer Literacy (GER) 3
Electives 15
Political Science 12

30

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Sociology Curriculum (B.A.)

Freshman Year
English (GER) 6
Foreign Language/Cultural Studies* 9
Humanities (GER)
- History 6

Mathematics (GER)
- Mathematics 101 3

Sociology 201 3
Natural Sciences (GER) 6

33

Sophomore Year
Arts (GER) 3
Humanities (GER)
- English 201 or 202 3
- Speech 110 3

Mathematics (GER)
- Mathematics 125 3

Natural Sciences (GER) 3
Social Sciences (GER)
- Sociology 3

Electives 12
English Elective 3

33

Junior Year
Social Sciences (GER)
- Political Science 201 3
- Political Science 3

Sociology 308 or 345 3
Sociology 320 (GER) 3
Sociology Electives 6
Psychology 102 3
Psychology 202 3
Electives 6

30

Senior Year
Sociology 401 3
Sociology Electives 9
Statistics 3
Electives 12

27

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

*Cultural Studies courses include Geography (Geography 205, 227, 290), History and Archaeology (History 440, 441, 442, 444, 483, 484, Archaeology 420, 462, 463, 464, 466), and English (English 406, 425, 426, 427, 428, 430, 482). Students may choose 9 hours in one area or they may choose 3 hours in each of the areas. Courses chosen to satisfy cultural studies may be used toward a minor but may not be used toward any other curricular requirements.

Requirements for a Minor in Geography

A minor in geography consists of 21 hours, of which nine must be at the 300 or 400 level. All courses applied toward the minor must be completed with grade of "C" or higher.

Requirements for a Minor in Political Science

A minor in political science consists of 21 hours, of which nine must be at the 300 or 400 level. All courses applied toward the minor must be completed with grade of "C" or higher.

Requirements for a Minor in Sociology

A minor in sociology consists of 21 hours, of which nine must be at the 300 or 400 level. All courses applied toward the minor must be completed with grade of "C" or higher.

Requirements for the Interdisciplinary Minor in Gerontology (24 semester hours - at least 10 hours must be from courses 300 level or above.) All courses applied toward the minor must be completed with grade of "C" or higher.

Core Courses (15 semester hours):

Family and Child Studies 201 or Psychology 408 (3 semester hours); Health & Physical Education 406 (3 semester hours); Sociology 435 (3 semester hours); Family and Child Studies 447 (3 semester hours); Education 420; Health & Physical Education 112; Human Ecology 467, 477, 478, or 479; or Sociology Practica (3 semester hours).

Electives (9 semester hours):

Select 9 hours from the courses listed below. Courses selected must be approved by your advisor. It is strongly suggested that ALL students elect either Psychology 475 or Sociology 436 that relate to death and grieving. Counseling 400; Family and Child Studies 210, 320, 400, 420; Food and Nutrition 203; Health & Physical Education 292, 401, 416; Psychology 474, 475, 480, 499; Sociology 308, 425, 436.

Interdisciplinary Minor in Cultural Resources:

See Department of History.

Political Science (Pre-Law Concentration)

The pre-law concentration within political science is specifically designed to prepare students to succeed in law school. It consists of a political science major and an English or journalism minor, together with selected other required courses, core curriculum courses, and electives. Entering freshmen must have a minimum 22 composite on the ACT. A 2.5 GPA is required to transfer into the program and must be maintained by students in the program. Students are advised that a minimum GPA of 3.0 or higher is suggested as the GPA typically necessary for admission to law school.

Students wishing to pursue this concentration should follow the political science curriculum outlined above with the following differences:
History (101 and 102 or 201 and 202, instead of all four courses)
Foreign Language (6 hours instead of 12)
English or Journalism (Must minor in either English or Journalism.)
English minors must include English 303, 332 or 336 or 460, 415. Journalism minors must include Journalism 101, 102, 310, 320, plus nine additional hours of advanced courses. (300- and 400- level), including any two courses in practical journalism).
Law (Must take Business Law 255, 356 and Political Science 426, 427 - Constitutional Law)

Department of Speech

Requirements for a Major

A major in Speech consists of 33 hours which may be earned by concentrating in speech communication, theatre, or pre-professional speech-language pathology. The student concentrating in speech communication/interpersonal and organizational communication is expected to take the following courses: Speech 110/377, 325, 430, 431, 433, 440, 455, 466, plus 9 additional hours in speech. In addition, 21 hours of specialized study in one of three tracks (corporate communication, public relations, or law and related professions) will be approved by the student's advisor. Students interested in Theatre should consult the Director of the School of the Performing Arts regarding the appropriate courses for a major concentration in Theatre. Please refer to the section on the School of the Performing Arts on page 117 of this Bulletin. The degree of Bachelor of Arts is awarded upon completion of either the speech curriculum or pre-professional speech-language pathology curriculum.

Speech Curriculum (B.A.)

Freshman Year
Arts (GER) 3
Natural Sciences (GER)
Biological Science 101, 102 6
English (GER) 6
Mathematics (GER)
Mathematics 101 and 125 6
Speech 110/377, 325, Elective 9
30

Sophomore Year
Humanities (GER)
History 201, 202 6
Foreign Language* 9
Computer Literacy (GER) 3
Speech 440, Elective 6
Electives or Minor 4
HPE 150 2
30

Junior Year
Social Sciences (GER)
Political Science 201 3
Natural Sciences (GER)
Must be Physical Science 3
Humanities (GER)
English 201 or 202 3
Speech 430, 455 6
Electives or Minor 13
HPE Activity 2
30

Senior Year
Social Sciences (GER)
Psychology 102 3
Sociology 201 3
Speech 431, 433, 466 9
Speech Elective 3
Electives or Minor 12
30

Total Semester Hours 120
(GER): General Education Requirement) (pg. 29)

Nine (9) hours foreign language requirement must be in the same language.

Pre-Professional Speech-Language Pathology Curriculum (B.A.)

Freshman Year
Arts (GER) 3
Natural Sciences (GER)
Biological Science 101, 102 6
English (GER) 6
Mathematics (GER)
Mathematics 101 3
Statistics 200 3
Speech 110, 202, 210, 222 10
31

Sophomore Year
Computer Literacy (GER) 3
Humanities (GER)
English 201 or 202, 332 6
Natural Sciences (GER)
Physics 205 3
Social Sciences (GER)
Psychology 102 3
Special Education 300 3
Speech 301, 302 6
Biological Science 224 3
..... ____
..... 27

Junior Year
Social Sciences (GER)
Political Science 201 3
Sociology 201 3
Humanities (GER)
History 201, 202 6
Speech 418, 443, 470 9
Family and Child Studies 201, 331 6
Minor 6

33

Senior Year
Family and Child Studies 301, 410 6
Health & Physical Education 150 2
English 303 3
Speech 411, 413 6
Minor 15

32

Total Semester Hours 123
(GER): General Education Requirement (pg. 29)

Requirements for a Minor in Speech

The following courses are required to complete a Speech (Communication) minor: Speech 110/377, 430, 431, 440, 466, and six additional hours of Speech (Communication) courses. All courses applied toward the minor must be completed with grade of "C" or higher.

School of the Performing Arts

Bachelor of Arts in Speech with a Concentration in Theatre

Auditions/interviews for placement within the program are required. These occur prior to enrollment or within the first two weeks on campus. Auditions may take place in a variety of formats: prepared performance pieces, portfolio presentation, or interviews. Students may contact the Coordinator of Theatre for additional information.

Full-time theatre majors will enroll in the Theatre Practicum (Speech/Theatre 404) no less than 9 quarters before graduating. Boards are held at the end of winter quarter to evaluate each student's progress and set goals for the future. Students are required to attend weekly major/minor meetings which serve as a forum for information, discussion of issues, and notification of departmental concerns and professional opportunities.

Undergraduate students follow the speech curriculum (B.A.), with the following differences: theatre students will take speech/theatre courses instead of speech communication courses (excepting Speech 110), and additional speech/theatre courses as noted below.

Required Speech/Theatre courses:

Speech 101, 201 or 290, 240, 307, 404(9), 407, 409, 428, 434, 435

Speech/Theatre elective (choose no fewer than 25 additional hours from the courses listed below):

Speech Theatre 240(6), 307(9), 400, 402(9), 403, 404(3), 405, 407(9), 408, 410, 414, 423(3), 427(6), 471, 472, 480, 490, 491

It is also necessary for Speech/Theatre majors to take English 415.

Requirements for a Minor in Theatre

A minor in Theatre is designed for those who have a strong interest in Theatre as a secondary subject. A minimum of 21 hours is required: Speech 201, 240, 307, 400, 401, 404 (2 hrs), 490, and three hours to be chosen from 300 or 400 level Theatre courses. For additional information on the School of Performing Arts, see page 123. All courses applied toward the minor must be completed with grade of "C" or higher.

The Graduate School

The Dean of the Graduate School administers and coordinates the graduate programs of the University. Graduate instruction is supervised by the appropriate academic deans, directors of graduate studies, department heads, and graduate faculty under policies set forth by the University of Louisiana System and the Graduate Council chaired by the Dean of the Graduate School. The President of the University is the final local authority in the operation of the graduate program.

Student Responsibility

Each graduate student must assume the responsibility for becoming knowledgeable concerning Graduate School regulations and requirements.

Graduate Programs

Graduate degrees granted by the University are
Master of Arts
Master of Business Administration
Master of Education (Fifth-Year Program)
Master of Fine Arts
Master of Professional Accountancy
Master of Science
Doctor of Business Administration
Doctor of Education
Doctor of Philosophy
Joint MD/PhD with LSUMC-Shreveport

The graduate degrees and curricula, by colleges, are as follows:

College of Administration and Business
Master of Business Administration
Master of Professional Accountancy
Doctor of Business Administration

College of Applied and Natural Sciences
Master of Science; curricula available as follows:
- Biology
- Family and Consumer Sciences
- Nutrition and Dietetics

College of Education
Master of Arts; curricula available as follows:
- Counseling and Guidance, concentrations in
  - School Counseling
  - General Counseling
- Educational Psychology
- Industrial/Organizational Psychology

Master of Science; curricula available as follows:
- Curriculum and Instruction
- Health and Physical Education

Master of Education 5th-Year Program/Certification; concentrations in
- Art Education
- Business Education
- Elementary Education
- English Education
- Foreign Language Education
- Health and Physical Education
- Mathematics Education
- Music Education
- Science Education
- Social Studies Education
- Speech Education
- Vocational Agriculture

Doctor of Education; curricula available as follows:
- Curriculum and Instruction
- Educational Leadership

Doctor of Philosophy; curricula available as follows:
- Counseling Psychology

College of Engineering and Science
Master of Science; curricula available as follows:
- Chemistry
- Computer Science
- Mathematics
- Physics
- Manufacturing Systems Engineering
- Engineering, concentrations in
  - Biomedical Engineering
  - Chemical Engineering
  - Civil Engineering
  - Electrical Engineering
  - Industrial Engineering
  - Mechanical Engineering

Doctor of Philosophy; curricula available as follows:
- Biomedical Engineering
- Engineering

Interdisciplinary Engineering Ph. D. Program in Computational Analysis and Modeling
Joint MD/PhD with LSUMC-Shreveport

College of Liberal Arts
Master of Arts; curricula available as follows:
- English
- History
- Speech
- Speech-Language Pathology and Audiology

Master of Fine Arts; curricula available as follows:
- Art

Admission

Admission by transfer is permissible if the transferring student is eligible to re-enter the institution from which the applicant is transferring and **MUST** meet Tech's entrance requirements.

A student will not receive graduate credit for any course taken unless he or she has complied with the following admission procedures and has been accepted for admission to the Graduate School.

For admission to Graduate School, the applicant must satisfy all general admission requirements for Louisiana Tech University. Application forms for admission may be obtained from the Graduate School. All necessary official transcripts, standardized test scores, and admission application forms must be received in the Graduate School at least 4 weeks in advance of registration for the session in which the student expects to enroll. Transcripts must be mailed directly from the college/university to Louisiana Tech. Any credentials missing before a student's first complete term of enrollment will result in the student not receiving graduate credit, nor will an official Louisiana Tech academic transcript be provided to the student. Policies governing the submission of transcripts for all graduate students are as follows:

(1) Students in pursuit of a master's degree must submit **ALL** official undergraduate transcripts (regardless of the number of colleges attended in order to earn the baccalaureate degree) so that a full evaluation of the grade point average may be made. In addition, all transcripts of any graduate work attempted at other colleges and universities are required. Students applying for unclassified status must meet the same transcript requirements listed in this section.

(2) Those students in pursuit of a doctoral degree must submit **ALL** official transcripts (undergraduate and graduate) for evaluation of eligibility for these programs.

(3) Those students in pursuit of the "Master's Plus 30" program must submit only the official transcript certifying

receipt of the master's degree from a regionally accredited institution.

(4) Those students applying for transient status must submit only an official copy of a transcript certifying that they are actively pursuing an advanced degree at another institution.

(5) If permission to enter the Graduate School is given prior to graduation, this admission is automatically withdrawn if the Bachelor's degree is not awarded before the date of registration.

Note to International Graduate Students: Upon arrival at Louisiana Tech, an International Graduate Student must enroll for a minimum of one quarter in the program he or she was approved for and admitted to. After fulfilling this requirement, a student may apply for transfer to another program by following the Graduate School's admission procedures.

Summary of Admission Procedures

1. Obtain application for Admission from the Graduate School at least 5 weeks prior to registration.
2. Return completed forms to the Graduate School at least 4 weeks prior to registration.
3. Request all necessary official transcripts and test scores be sent to the Graduate School. These documents must be received at least 4 weeks prior to registration.
4. Comply with any additional requirements of individual graduate programs as specified in this Bulletin. Additional requirements are available from the Director of Graduate Studies in the individual college to which you are applying. Please note that the deadline for these additional requirements may differ in each College.
5. Follow the registration procedure as outlined on the Tech website (B.O.S.S.) or in the Quarterly Schedule of Classes ("The Racing Form") available from the University Registrar's Office during the appropriate registration period.

Graduate School Admission

Certain minimum admission standards are established by the Graduate Council for the University. Each academic college has the prerogative to be more selective and to establish higher standards for its respective graduate students.

Graduate Non-Degree Admission Categories

1. Unclassified: Students seeking graduate credit but not seeking a higher degree must meet the same academic requirements for admission to Graduate School as students admitted to work toward a master's degree.

2. Transient: Students admitted to a graduate program at another institution wishing to take a course(s) for transfer credit may be allowed to take such a course(s) with the approval of the Director of Graduate Studies in the college in which he or she would normally enroll. A maximum of 12 hours of transient credit will be allowed. Transcripts shall note that such credit is for transfer only.

3. Master's Plus 30: Students who have earned a master's degree from a regionally accredited institution are admissible to the Graduate School on this basis. However, this action does not admit the student to any specific program of study within the Graduate School automatically.

4. Extension: Available to students at a Louisiana Tech Extension Site wishing to enroll in an extension course offering for graduate credit without applying for and being admitted to a graduate degree program. Students wishing to enroll in this category must produce an unofficial copy of their baccalaureate degree-posted transcript, meet course prerequisites, have a cumulative undergraduate GPA of 2.25 (or 2.5 on the final 60 semester hours), and must understand that they are not admitted to a degree program. A maximum of 9 semester hours of graduate credit are allowed under this non-degree admissions category. Use of this credit toward a graduate degree at a later date will be determined by application and unconditional admission to the Graduate School for a valid graduate degree program.

Admission to Graduate Degree Programs

Unconditional Admission

Unconditional admission requires that the applicant must have earned a bachelor's degree from a regionally accredited college, and the minimum grade point average to be considered for unconditional admission is 2.50 (4.0 system) on all work attempted or 2.75 on the last 60 hours attempted. The final decision rests with the Dean of the Graduate School and is based upon the recommendation of the admissions officials of the academic college the student wishes to enter.

Each graduate student seeking admission to a degree program will be required to take the standardized test(s) specified by the academic college. Applications for the appropriate test may be obtained from the Counseling Center, Keeny Hall 310. Those students qualifying for unconditional admission who have not submitted a standardized test score may be allowed to submit the test score during their first quarter of enrollment as a graduate student, unless otherwise specified by the appropriate college. Students who fail to submit a test score by the specified deadline will be dropped from graduate status until a satisfactory test score has been received; those students unconditionally admitted who do not submit a satisfactory test score will be subject to reexamination by the admissions officials of the appropriate academic college.

Conditional Admission

Conditional admission may be gained by those applicants not qualified for Unconditional Admission, while satisfying or validating his/her undergraduate deficiencies or meeting other conditions of admission. The minimum undergraduate grade point average to be considered for Conditional Admission is 2.25 (4.0 system) on all work attempted or a 2.50 average on the last 60 hours attempted. The applicant is given 9 hours in which to fulfill these stipulated conditions. If the conditions are not removed after 9 hours of course work, the applicant will be dropped from the Graduate School. The final decision rests with the Dean of the Graduate School and is based upon the recommendation of the admissions officials of the academic college the student wishes to enter.

Conditional status may be changed to unconditional status when a student earns a minimum of 9 hours of graduate credit at Louisiana Tech, provided he or she has fulfilled the conditions of admission and has a "B" average on all work pursued for graduate credit, including no grade lower than "C" and not more than one course with a grade of "C." When a student completes 9 hours of graduate credit and is not eligible for unconditional status, the student will be dropped from graduate status.

Each graduate student seeking admission to a degree program will be required to take the standardized test(s) specified by the academic college. Applications for the appropriate test may be obtained from the Counseling Center, Keeny Hall 310. Those students qualifying for unconditional admission who have not submitted a standardized test score may be allowed to submit the test score during their first quarter of enrollment as a graduate student, unless otherwise specified by the appropriate college. Students who fail to submit a test score by the specified deadline will be dropped from graduate status until a satisfactory test score has been received; those students conditionally admitted who do not submit a satisfactory test

score will be subject to reexamination by the admissions officials of the appropriate academic college.

Applicants for Readmission to Tech must complete an application for admission when the student has not been enrolled for two or more quarters (except for the summer term), and a new application fee is required.

If a student has been out of school for only one regular quarter (excluding the summer term), then a written request for readmission should be made directly to the Graduate School. There is no application fee required for this process.

Doctoral Program Admission

Applicants for admission to the programs of study leading to the doctoral degree either will be granted an unconditional admission or will be rejected. Admission shall anticipate a minimum preparation to proceed at the doctoral level of study and shall consist of a bachelor's degree from a recognized institution and a transcript demonstrating sufficient undergraduate preparation for advanced study in both major and minor fields. Usually, although not necessarily, the applicant will possess a master's degree. In addition to formal courses and credits demonstrating adequate preparation, an acceptable report on the Graduate Record Examination or a designated comparable standard instrument, such as the Graduate Management Admission Test, is required. Applications and other information may be obtained from the Counseling Center, Keeny Hall, Room 310.

A minimum of three references is required. A locally administered screening or qualifying examination, or an interview of the applicant may be required at the direction of the admitting college. It is emphasized that no quantitative standards are set and that admission is a judgment of the admissions officials of the appropriate college. These officials make their recommendation to the Graduate School Office.

The Dean of the Graduate School will receive and expedite the handling of all admission documents. Complete transcripts of the applicant's undergraduate and graduate record, and of all academic work taken at other institutions, must be submitted to the Graduate School in order to have a doctoral application considered. The applicant should consult the doctoral admission requirements for the appropriate college in order to determine that area's specific requirements as to test scores and other items. Each academic college has the prerogative to be more selective and to establish higher standards for its respective graduate students.

Graduating Seniors as Part-Time Graduate Students

A graduating senior at Louisiana Tech University in the last quarter of his/her academic program who has a 3.0 or better average on all work attempted may be permitted to take a combined load of undergraduate courses and courses for graduate credit (500 level) not to exceed 12 semester hours with a limit of 4 hours for graduate credit. This permission is subject to the recommendation of the student's College Graduate Director with the written approval of the Dean of the Graduate School.

Testing

Colleges require that a student wishing to enter Graduate School take the appropriate test(s):

- College of Administration and Business: Graduate Management Admission Test (GMAT).
- College Applied and Natural Sciences: Graduate Record Examination (GRE -general).
- College of Liberal Arts: Graduate Record Examination (GRE-general).
- College of Education: Graduate Record Examination (GRE-general).
- College of Engineering & Science: Graduate Record Examination (GRE-general).
- All international students are required to submit a score on the Test of English as a Foreign Language (TOEFL) before their applications can be evaluated. The test must be taken no earlier than two years prior to application. The minimum acceptable score on the paper-based TOEFL is 550. The minimum acceptable score on the computer-based TOEFL is 213.

For additional information and to register for these tests, contact the Counseling Center, P. O. Box 5255, Ruston, LA 71272. Telephone (318) 257-2488.

General Requirements for All Advanced Degrees Courses

All 500-level courses are open to graduate students. Courses numbered in the 600- and 700-level generally require doctoral classification and are specifically associated with doctoral programs. There are courses numbered in the 400-level which are usually for seniors but may carry graduate credit. Graduate students taking 400- level courses for graduate credit are normally required to undertake additional work in order to bring the course requirements up to graduate level.

The semester hour is the unit of credit at Louisiana Tech. Most courses carry a credit of three semester hours. Credit for each course is indicated by a three-digit numerical description, for example, 0-3-3: the first number indicates laboratory contact hours per week; the second, lecture periods per week; and the third, credit in semester hours.

Grade Requirement

To receive a graduate degree from Louisiana Tech University, a student must have a GPA of at least 3.0 on all work pursued for graduate credit while registered at Louisiana Tech, as listed on the student's transcript, and a GPA of at least 3.0 on all graduate courses listed on the student's approved plan of study. No grade lower than "C" and no more than two "C's" will count toward a graduate degree.

A student will be dropped from graduate status if his/her quarterly GPA or cumulative GPA, as listed on the student's transcript, drops below 3.0 on all work pursued for graduate credit at Louisiana Tech for three consecutive quarters. This rule applies to all graduate students whether they are currently pursuing a graduate degree or not.

A graduate student unconditionally admitted to a graduate degree or graduate non-degree program (other than extension programs) will be placed on **graduate academic probation** if his/her quarterly or cumulative GPA, as listed on the student's graduate transcript, drops below 3.0 on all work pursued for graduate credit. The student will be allowed two additional quarters (three consecutive quarters total) to regain his/her good standing in graduate status by restoring his/her graduate cumulative GPA above the 3.0 minimum and providing he/she earns grades no lower than a "B" while on academic probation. A student will be dropped from graduate status to post-baccalaureate status if he/she does not fulfill the requirements to be restored from graduate academic probation to unconditional graduate status during the three consecutive quarters. The student will be required to appeal his/her dismissal from the graduate program through the appropriate individual(s) in his/her College to the University Graduate Council to be reinstated to graduate status.

A graduate student conditionally admitted to a graduate degree or graduate non-degree program is not eligible for graduate academic probation and therefore must maintain a 3.0 graduate average while completing the conditions of their graduate admission. Failure to achieve a quarterly and cumulative graduate GPA of 3.0 or better will result in the student being dropped from graduate status to post-baccalaureate status. The student will be required to appeal his/her dismissal from the graduate program through the appropriate individual(s) in his/her College to the University Graduate Council to be reinstated to graduate status.

System of Grading

Official grades are maintained in the University Registrar's Office. Tech applies a traditional system of grading and awarding quality points for grades earned. An "A" is awarded for the highest degree of excellence that is reasonable to expect of students of exceptional ability and application. A grade of "B" is superior. A grade of "C" is average. A grade of "D" is given for a quality of work that is considered the minimum for receiving credit for the course. A grade of "F" is given for a failure, and the work must be repeated to receive academic credit. The University's system of grading is as follows:

Grade	Quality Points
A	4 quality points per semester hour
B	3 quality points per semester hour
C	2 quality points per semester hour
D	1 quality point per semester hour
F	0 quality points per semester hour
I	Incomplete (see explanation below)
S	Satisfactory (see explanation below)
W	Withdrew (see explanation below)
NC	No Credit (see explanation below)

The grade "I" (Incomplete) is used to denote failure to complete all assigned class work and/or examinations as a result of *conditions beyond the student's control.* **It is the responsibility of the student to initiate a request with the instructor that a grade of "I" be issued.** If the student's work is of passing quality, the instructor may approve the student's request and will assign a grade of "I" plus the average letter grade on all work completed to that point (e.g., IA, IB, IC, or ID). A grade of "IF" cannot be issued. If the instructor agrees to issue an "I," he/she will complete a standard "contract" with the student detailing requirements for course completion and specifying the date those requirements must be finished within published time limits. Instructors then provide copies of the contract to the student, the department head/director, the director of graduate studies in the student's college, and to the Dean of the Graduate School. Students will receive a grade of IA, IB, IC, or ID on their grade report (and transcript) for that quarter. Incomplete grades are factored into hours attempted and quality points awarded. Therefore, they impact a student's quarter and cumulative grade point averages and are a factor in decisions affecting graduate academic probation or removal from the graduate program. The maximum amount of time allowed for a student to finish incomplete work is Friday of the fourth week in the following quarter, with one exception: students receiving an "I" in the Spring Quarter have until Friday of the fourth week in the following Fall Quarter to complete their work. A reminder of this date is published in the academic calendar each quarter and can also be found on the academic calendar at Tech's website www.latech.edu. If the student does not complete the required work within the contracted period, the instructor will change the "I" to an "F" by delivering a final grade change to the Registrar's Office by Friday of the fifth week of the quarter. The final grade replaces the "I" on the student's permanent record (transcript); attempted hours, earned hours, quality points, and quarter/cumulative grade point averages are recalculated applying the final grade. A student may be placed on or removed from academic probation, or removed from the graduate program based on the recalculated GPA at the time an "I" grade is cleared. "I" grades are cleared only by completing the required course work, and not by registering for the course again. **NOTE:** Students registered for approved graduate research, practicum, dissertation, or thesis courses requiring multiple quarters of the same course registration to complete the research receive an "I" for each attempt until the research or practicum is accepted as complete by the advising faculty member. At that time, the graduate student's "I" grades are changed to "S" on his/her permanent record.

A grade of "S" indicates satisfactory completion of a course. The "S" grade increases hours earned but does not affect hours attempted or quality points earned and is not computed in any grade point average (GPA). Students registered for a course where the grade of "S" is used who do not complete the required course work will receive the grade "F."

A "W" is issued when a student withdraws from a class (drops a class) after the final date for registration has passed and before the end of the first seven weeks of a quarter. The "W" grade will appear on the student's grade report and permanent record (transcript) but is not included in computing the student's GPA. Students who stop attending class(es) without following proper drop/withdraw or resignation procedures (walk-away) will receive an "F" grade for each class affected.

The grade "NC" is used to denote no credit for undergraduate developmental courses only and does not apply to graduate-level work.

Grade Point Average

A student's **quarterly GPA** is obtained by dividing the sum of the quality points earned for the quarter by the number of semester hours attempted that quarter. The **cumulative GPA** is determined by dividing the total quality points earned by the total number of hours attempted. Quarterly and cumulative GPA's appear on the student's transcript. NOTE: Graduate GPA's and graduate transcripts are maintained separately from any undergraduate career work maintained within the Student Information System.

An **earned GPA** is computed by subtracting any non-repeated "F" grade hours, repeated course hours, and associated quality points from the respective cumulative totals and then recalculating the average. The earned GPA is used to determine eligibility for progress into and completion of a certification program, a practicum, and most importantly all courses pursued for graduate credit will be counted in the grade point average for receipt of a degree. The earned GPA does not appear on the student's transcript. The earned GPA is maintained by the specific college in which the student is enrolled.

Registration and Classification

Graduate students should remain continuously enrolled while they pursue their graduate program. If circumstances prevent continuous enrollment for one or more quarters (except Summer Quarter), graduate students must apply for readmission upon their return. Graduate students must remain continuously enrolled during the research/practicum phase of their program. Graduate students must comply with time limitations for completion of programs set by policy for the graduate program in which they are enrolled.

Graduate students will conform to the registration schedule of the University and may not enter later than the last allowable date set by the University Registrar. Students requiring a faculty member's time and assistance, laboratory facilities, library services, etc., while engaged in research or practicum, or

preparing for or taking examinations must register for a minimum of three hours of graduate credit in 551, 590, 690, or Education 580.

Before registering, a graduate student must obtain his or her advisor's approval of his/her proposed program (plan of study).

Academic Misconduct

Academic misconduct at the University is determined by the faculty member, committee, or other supervisor(s) under whom such misconduct occurs. The misconduct may occur in an individual class, a comprehensive examination, a practicum, an internship, a thesis or dissertation, a research project, a multi-quarter sequence of courses, or any other academically related matter or setting. Penalties may range from dismissal from the University or an academic degree program to a failing grade or lesser penalty as determined by the faculty member, Advisory Committee (or its equivalent), or supervising authority. The student has the right to appeal the charge of academic misconduct in accordance with the Final Grade and Appeals Procedure and/or the Graduate Student Academic Appeals Procedure.

Final Grade & Academic Appeals Procedure

A final grade in a course represents the cumulative evaluation and judgment of the faculty member placed in charge of that course. If a student feels the final grade or an academic decision in a course was not determined in accordance with University policies or the published syllabus, or was determined arbitrarily, the student may appeal by adhering to the following procedure:

1. **Confer with the faculty member**, setting forth clearly all points of concern. If the student remains unsatisfied with the results of this conference, then,
2. **Confer with the head of the department** in which the course is taught, setting forth clearly all points of concern. If the student remains unsatisfied, then
3. **Write a letter of appeal to the dean of the college in which the course is taught**. The dean will send copies of the letter to the faculty member and department head. This letter must (a) be received by the dean within the first ten (10) regularly scheduled class meeting days of the term immediately following the term in which the appealed grade was received and (b) be an accurate and complete statement of all facts pertaining to the matter. Falsification may result in disciplinary action.

The dean may make a decision, which would be final in the matter, or refer the appeal to the college's committee on standards for review and recommendation. The committee's report would be a recommendation to the dean, whose decision would be final. In reviewing the appeals, both the dean and committee would have broad latitude in their procedures and recommendations. They might, for example, request additional information privately from those involved. Or they might choose to invite specified persons, including the student and faculty member, to a meeting to discuss the matter. Whatever their approach, it should take appropriate account of the interests of both the student and faculty member.

In the case where a grade penalty is given to a student because of academic misconduct, the student has the right to appeal the grade penalty as well as the charge of academic misconduct in accordance with the grade and academic appeals procedure.

In all cases the dean shall communicate the final decision to the student, faculty member, department head, and, if a grade change is involved, to the University Registrar. In appeals where the dean initially makes the decision, the decision should normally be communicated to the student within ten (10) class days after the appeal deadline. When appeals are referred to the committee, the final decision should normally be communicated to the student by the dean within twenty (20) class days after the appeal deadline.

Graduate Student Academic Appeals Procedure

Recognizing the unique attributes of graduate study, Louisiana Tech University has adopted policies pertaining to the appeal process for issues faced by graduate students. The following policy will be followed by graduate students wishing to appeal decisions related to their status as graduate students or their progress in graduate programs. This policy is to be followed by students wishing to pursue appeals beyond the college to which they have been admitted.

1. **Form:** Graduate student appeals must be presented in writing to appropriate University personnel, as described below. Appeals shall detail the issue to be addressed and a proposed solution to students' appeals.
2. **Timeliness:** A student must initiate an appeal of a college-level decision within ten (10) University class days of the college-level decision being communicated to the student. Each subsequent appeal must be made within ten (10) University class days of the student being advised of the previous level appeal decision.
3. **Levels of Appeal:** An appeal of a college-level decision must first be made to the Dean of the Graduate School. A student may appeal the decision of the Dean of the Graduate School to the University Graduate Council. A student may appeal the decision of the Graduate Council to the Vice President for Academic Affairs. A decision of the Vice-President of Academic Affairs may be appealed to the President of Louisiana Tech University.

Financial Aid for Graduate Students

Louisiana Tech University provides equal educational opportunities for all graduate students, and this policy of equal opportunity is fully implemented in all programs of financial aid to assist students in obtaining an education at Louisiana Tech.

An extensive financial aid program encompassing employment, loans, and scholarships is available to assist students. Need, skills, and academic performance are carefully weighed to develop a "financial package" for qualifying graduate students.

Employment is available in a wide variety of forms to the graduate student who is willing to work. Areas of work include but are not limited to clerical, maintenance, food service, laboratories, library, and dormitories. Pay rates are commensurate with the skill and experience required, and work is limited to avoid interference with academic pursuits. The University participates in the Federal College Work-Study program designed to assist students with financial need in addition to employment available through individual departments on campus.

The student is advised to make inquiries at the Office of Student Financial Aid in person or by writing P. O. Box 7925, Ruston, Louisiana 71272-0029 in January prior to Fall enrollment.

Graduate students must be admitted and enrolled in their degree program in order to qualify for their federal assistance. Federal regulations stipulate that any undergraduate and graduate student must be enrolled "in an eligible program for the purpose of obtaining a degree, certificate, or other recognized credential." Non-degree students do not qualify for financial aid. Requirements for admission into the Master's or Doctoral programs are listed in the Graduate School section of this Bulletin. Before graduate students can be considered eligible for any financial assistance, they must meet all admission standards as specified by the Graduate School and their academic college. Students admitted as Unclassified, Transient, Master's Plus 30, and Extension who are not education majors seeking a teaching certificate are considered enrolled in a non-degree program, and, therefore, are not eligible to receive financial aid. All inquiries regarding these standards should be referred to the Graduate School or to the appropriate Academic Dean.

Graduate students must meet the requirements for "satisfactory progress" in order to be eligible for participation in the programs of student financial aid at Louisiana Tech University. What constitutes "satisfactory progress" and the consequences of failure to meet them successfully are applicable to the financial aid programs in a different fashion from regulations governing academic probation and suspension. Federal regulations frequently mandate amendments to established policies; consequently, financial aid participants (and potential participants) would be well-advised to maintain close liaison with the financial aid office regarding these requirements.

All applicants for federal financial assistance must complete their file in the financial aid office at least two months prior to the beginning of the quarter for which they seek to receive aid. Priority is given to applications received by or before published deadlines. The following sources of financial assistance are available to eligible students, providing funds are available.

Monthly Payment Options for Students and Families

Tuition Management Systems offer families several Monthly Payment Options to help make education expenses more affordable. The Interest-Free Monthly Payment Option enables families to spread all or part of the annual expenses over equal monthly payments. There are no interest charges and only a small annual fee. This plan includes life insurance protection covering the unpaid balance at no additional cost. Additionally, low-interest monthly payment options, including an unsecured loan, a home equity credit line, and federally backed loans, are also available. Please contact Tuition Management Systems at 1-800-722-4867 or 401-849-1550 for more information on these programs.

Federal Perkins Loan Program

A Perkins Loan is a low-interest loan designated to help undergraduate and graduate students pay educational costs. A graduate student may borrow up to an aggregate for all years of $30,000. A new student borrower has a nine-month "period of grace" after the student ceases to be enrolled on at least a half-time basis at the University before repayment must begin.

Subsidized and Unsubsidized Federal Stafford Loan Program (Formerly Guaranteed Student Loan Program)

Stafford loans are available for students meeting certain qualifications. Loans are made up to $8,500 per year for Subsidized Stafford and $10,000 per year in the Unsubsidized Stafford for graduate students. Aggregate loan limits are $138,000 for graduate/professional students of which no more than $65,000 of this amount may be in subsidized loans. The graduate debt limit includes any subsidized Stafford Loans received for undergraduate study.

After a student's application has been processed by the Office of Student Financial Aid, his/her Stafford loan is electronically certified and submitted for guarantee. He/She will receive a promissory note from the Guarantee agency which he/she must complete with references and return to his/her lender, credit union, or savings and loan association. This process may take three weeks before funds are available. Under the Subsidized Stafford Loan Program, interest charges to the student and repayments begin six (6) months after the student is no longer at least a half-time student. In the Unsubsidized Stafford Loan Program, interest does accrue while the student is enrolled on at least a half-time basis and students are required to make interest payments while in school or have the interest capitalized. To apply, students must complete the Free Application for Federal Student Aid (FAFSA) and a Louisiana Tech Financial Aid Data Form.

Academic Scholarships

Louisiana Tech University has a General Scholarship Program; in addition, each of the five colleges (Administration and Business, Applied and Natural Sciences, Education, Engineering & Science, and Liberal Arts) has its own scholarship program. Graduate students interested in applying should contact their academic college for more information.

Scholarships are divided into the following categories:

- **Academic Scholarships**. These scholarships are awarded on the basis of demonstrated ability--usually with regard to need.
- **Grant-in-aid and Service Awards.** Frequently, these are awarded on the basis of special skills and require the student to render a service to the University. Included in this category are scholarships in athletics, music, band, and academics.

Vocational Rehabilitation Grants

Vocational Rehabilitation is a public service program for physically and mentally handicapped individuals. To be eligible, a person must have a permanent disability which constitutes a job handicap. Graduate students with disabilities are advised to contact the Department of Vocational Rehabilitation in their districts for consideration of their cases.

Veterans' Orphans Scholarships

These scholarships are awarded to sons and daughters of deceased war veterans. Students apply to the Department of Veterans' Affairs in their district.

Graduate Assistantships

Assistantships for students pursuing master's degree and doctoral degree programs are offered. A student should check with the appropriate college for information concerning these assistantships.

In addition, a limited number of University Graduate Assistantships for master's and doctoral students are available to outstanding students. Applications for University Assistantships should be in the appropriate college Graduate Director's Office by February 1 preceding the fiscal year for which application for admission is made (fiscal year begins July 1). An applicant must be eligible for admission to the Graduate School, must generally have an undergraduate grade point average of at least 3.50, and must submit a standardized test score required in his/her field. Forms for applying for an assistantship can be obtained from the Graduate School Office or Tech's website.

Federal regulations for student financial aid consider assistantships as a financial aid resource and must be calculated when determining a graduate student's financial aid award.

Graduate Residentships

Graduate residentships are positions appointed by the Director of Housing for graduate students serving as hall directors in both men's and women's residence halls. Applicants may be married or single. There are limited positions available for summer. The applicant must be enrolled as a graduate student and agree to register for not more than 6 hours of course work each quarter. Responsibilities include residence hall staff supervision, program implementation, and coordination of hall administration. Additional information and application forms can be obtained from the Department of Housing, Louisiana Tech.

Student Loads

The maximum graduate credit course load for a graduate student is 12 semester hours in a regular session. Not more than 9 hours of this total may be 500-and 600-level courses which will include, in master's programs, research and thesis and/or special non-lecture courses, except with the permission of the student's director of graduate studies. Students who hold full-time assistantships in a regular session will be required to reduce the maximum load by 3 hours. In addition, the appropriate department may require further load reductions. For sessions shorter than one quarter, the maximum load will be 1 hour of graduate credit for each week of the session.

Six graduate semester hours are considered full-time for a graduate student, and 3 graduate semester hours are half-time status. A student receiving an assistantship must be qualified as a full-time graduate student. A graduate degree candidate may carry only the courses required for graduation at the end of the quarter and still be considered a full-time student.

Language Examinations

Language reading and proficiency examinations are scheduled once each quarter. Candidates must pre-register for the examination they wish. Schedules and regulations concerning foreign language reading and proficiency examinations may be obtained from the Director of the School of Literature and Languages.

Graduation

Commencement exercises are held and advanced degrees may be conferred at the close of any quarter, including the Summer Quarter. A student who is scheduled to receive a degree at the end of a quarter is expected to attend the commencement exercises. Degree candidates are required to arrive at the place of assembly no later than one hour before commencement exercises are scheduled to begin.

The applicant for graduation must be registered at Louisiana Tech University. Applications for graduation must be reported to the appropriate director for graduate studies and to the University Registrar by Friday of the third week of the quarter in which the student expects to graduate. Arrangements for caps, gowns, and hoods should be made in the University Bookstore.

General Requirements for All Masters' Degrees

Some departments impose degree requirements that are more restrictive than the general requirements. The student is advised to check the department or college section of the Bulletin for the area of study to be pursued.

Advisory Committee

Advisors are assigned to each student upon approval for admission to the Graduate School. After consultation with the advisor and/or department head, the academic dean will be requested to appoint an Advisory Committee consisting of three to five members of the graduate faculty. It will be the responsibility of the Advisory Committee to counsel with the student and to develop a Plan of Study that is then filed with the Graduate School. Any graduate student following a degree program who has not submitted a Plan of Study by the end of the first quarter of graduate study will not be allowed to register as a graduate student until a Plan of Study has been submitted. Any later revision in the Plan of Study should be reported. A final Plan of Study must be completed and submitted to the Graduate School prior to graduation.

Minimum Credit Requirement

The minimum credit requirement for the master's degree is 30 semester hours of graduate work, not more than 6 of which may be allowed for research and thesis. In optional programs not requiring a thesis, the standard course requirements should not be less than 30 hours. Students who do not write a thesis must demonstrate acceptable proficiency in research and reporting. A minimum of one-half of the credit for the degree must be in courses open only to graduate students.

Transfer Credits

Upon approval of the department involved, a maximum of 12 semester hours of graduate resident credit, or 1/3 of the hours required for the master's degree, may be transferred for degree credit from a U. S. regionally accredited college or university. The grade earned must be "B" or above, and the credits must be accepted as applicable to the master's degree program by the student's academic college. No correspondence credits are applicable toward a master's degree.

Transfer credit for graduate courses will be posted on the student's transcript only by written request from the student's graduate committee chairperson and approved by the college graduate director. Transfer credit will be posted only for courses listed on the student's approved plan of study.

The Thesis

The requirement of a thesis varies within the University; therefore, the prospective student should check the college and/or departmental sections of the Bulletin for their stipulations. General requirements, applicable to all graduate students meeting this thesis requirement (regardless of the field of study in which they pursue their work) are enumerated below.

A thesis subject should be selected by the student in consultation with the student's advisor and must be approved by the Advisory Committee. With permission of the Advisory Committee, a student not in residence but who has satisfied all course requirements may complete the thesis "in absentia."

The research and thesis must be certified by registration in and completion of all requirements of the research and thesis courses numbered 551. If the student does not complete the course during the quarter in which he or she is registered for it, an incomplete or "I" grade will be given in the course until such time as all requirements are completed, including the thesis. The limit on clearing this grade is 6 years from initiation of the graduate program or graduation, whichever comes first.

The thesis, in order to be approved, must be written in correct English and in scholarly form. It must show independent thought, both in its recognition of a clearly defined problem and in its method of treatment. It must reveal the sources of information and a knowledge of the bibliography of a special field. If a student's thesis contains proprietary information that the student wishes to retain as proprietary after submitting his or her thesis to the Graduate School and the Library, the student is permitted, based upon the recommendation of the chairperson of the committee responsible for approval of a student's thesis to the Graduate School, to substitute sample data for actual data, facsimile illustrations for actual illustrations, and "what-if" situations for actual situations, as appropriate, in the document

being released to the public domain. The student will include an appropriate disclaimer in the thesis to state that samples, facsimiles, etc., are being substituted for proprietary information in the document being released to the public domain.

The publication **"Guidelines for the Preparation of Your Thesis or Dissertation"** is available in the Graduate School Office and should be used as a guide in the preparation of the thesis. The thesis must be submitted to the college director of graduate studies 10 working days before the expected date of graduation, to the Dean of the Graduate School 7 working days before the expected date of graduation, and to Prescott Memorial Library 2 working days before the expected date of graduation. The director of graduate studies in each academic college will notify the academic dean and the Graduate School Office that the candidate has completed all requirements other than the final quarter's grades and is eligible to receive the appropriate degree prior to graduation

Students requiring a faculty member's time and assistance, laboratory facilities, library services, etc., while engaged in research and/or practicum will be required to register and pay fees.

Examinations

Oral and/or written comprehensive examinations will be administered by the Advisory Committee sufficiently in advance of graduation in order that the dean of the academic college (or a representative) in which the student is a candidate for a graduate degree may notify the Graduate School Office. This notification should be made at least one week before commencement and should state that all requirements have been satisfied, contingent upon satisfactory grades for the final quarter. Otherwise, the candidate will be delayed one quarter in receiving his or her degree. A student who does not successfully pass the comprehensive examination is entitled to one repeat examination.

No oral or written comprehensive is required for the MBA and MPA.

Time Limit for Degree

A time limit for the completion of all requirements for the master's degree has been set at 6 consecutive calendar years from the time of initial enrollment. Failure to do so will result in the student's immediate suspension from the master's degree program. Reinstatement appeals should be directed to the Dean of the Graduate School and the Graduate Council through the college director of graduate studies. The Graduate Council shall stipulate the conditions of possible reinstatement.

A Second Master's Degree

A student pursuing a second master's degree must earn a minimum of 15 additional graduate hours at Louisiana Tech and must satisfy the requirements for a minimum number of exclusive graduate courses, in addition to the thesis or practicum if required, to be taken in the area in which the second degree is being earned. Some colleges may require more than 15 hours. Transfer hours will not be approved on a second master's degree.

International students wishing to pursue a second master's degree or advance to a doctoral program need to obtain a new I-20 to comply with INS regulations.

Dual-Degree Programs

Students wishing to pursue two degrees simultaneously must provide the Graduate School with documentation for the Primary and Secondary degree program from the College(s) in which the degree program(s) reside. Appropriate admission procedures and separate applications must be followed and submitted for each degree program. If the programs are in different colleges, an application fee must be paid for each program application. Any program changes must be reported by the appropriate College(s) to the Registrar and the Graduate School immediately. Degree audits are required for each program being pursued. The Primary program must be completed first. Each degree program must be supervised by an appropriate Advisory Committee, with complete paperwork, including Plan of Study, completed and submitted for each program being pursued. All published guidelines, policies, and procedures are applicable to these programs.

General Requirements for All Doctoral Degrees

The doctoral degree is not awarded on the basis of completion of a course of study, however well done. Instead, the degree is earned by intensive individual study, inquiry, and original research by a well-qualified candidate under the close supervision of appropriate graduate faculty. The program must be tailored to the needs and interests of the candidate and to the needs and demands, present and future, of his or her profession. As a result, the modern doctoral candidate must expect to exhibit or develop a high level of competency and habits and skills of individual inquiry and original research which characterize the doctorate. All students are expected to make and are responsible for making continuous satisfactory progress while pursuing the doctoral degree. Consequently, it is neither possible nor desirable to set firm and rigid requirements.

Because of the unique nature of each doctoral program and external programmatic constraints such as accreditation guidelines, the university-authorized requirements for individual doctoral programs may be more rigorous than the general requirements listed in this section or as specified by the State Board of Supervisors. Students interested in these programs should refer to listings under individual colleges or on appropriate college web sites.

Minimum Credit Requirement

Formal course work is of indisputable value to bring the student into a scholarly relationship with members of the graduate faculty and to demonstrate accepted knowledge of a subject. A program leading to a doctoral degree normally shall be the equivalent of at least 3 years of graduate study beyond the baccalaureate degree.

Transfer Credits

Upon approval of the department involved, there would be no limit at the doctoral level regarding transferring courses for degree credit from a U. S. regionally accredited college or university. The grade earned must be "B" or above, and the credits must be accepted as applicable to the degree program by the student's academic college. No transfer credit for extension courses will be accepted.

Transfer credit for graduate courses will be posted on the student's transcript only by written request from the student's graduate committee chairperson and approved by the college graduate director. Transfer credit will be posted only for courses listed on the student's approved plan of study.

Plan of Study

During the first quarter in which students are enrolled in Graduate School, they report to the appropriate Director of Graduate Studies to request the appointment of a committee, with responsibilities including counseling with the student to develop a Plan of Study. A copy of this Plan of Study must be filed with the Graduate School Office during the student's first quarter of enrollment in a graduate degree program. Any graduate student who has not submitted a Plan of Study by the end of the first quarter of graduate study will not be allowed to

register as a graduate student until a Plan of Study has been submitted. All formal course work must be approved as acceptable for graduate credit. A final Plan of Study must be completed and submitted to the Graduate School prior to graduation.

Majors and Minors

It shall be the responsibility of the student's Advisory Committee to explore with him or her and, subsequently, to define for the student his or her obligations toward majors and minors. The general content and scope of these majors for the disciplines involved shall have been approved by the Graduate Council and shall be so framed that their integrity is served in the administration of the program.

Research and Dissertation

The dissertation is required of all candidates for the doctoral degree and must be supported by adequate research and independent study of a problem of reasonable scope under the close supervision of appropriate graduate faculty. A minimum of 15 semester hours credit is granted for this research and dissertation through the medium of appropriate registrations as guided by the student's Advisory Committee. If the student does not complete the course during the quarter in which he or she is registered for it, an "I" grade will be given in the course until such time as all requirements are completed, including the dissertation. The limit on clearing this grade is 6 years from initiation of the graduate program or graduation, whichever comes first. Grades of "I" and "S" are used for these courses. The dissertation must be submitted to the appropriate director of graduate studies at least 10 working days before the expected date of graduation, to the Dean of the Graduate School at least 7 working days before the expected date of graduation, and to Prescott Memorial Library 2 working days before the expected date of graduation. If a student's dissertation contains proprietary information that the student wishes to retain as proprietary after submitting his or her dissertation to the Graduate School and the Library, the student is permitted, based upon the recommendation of the Chair of the committee responsible for approval of a student's thesis/dissertation to the Graduate School, to substitute sample data for actual data, facsimile illustrations for actual illustrations, and "what-if" situations for actual situations, as appropriate, in the document being released to the public domain. The student will include an appropriate disclaimer in the dissertation to state that samples, facsimiles, etc., are being substituted for proprietary information in the document being released to the public domain.

The publication **"Guidelines for the Preparation of Your Thesis or Dissertation"** is available in the Graduate School Office and should be used as a guide in the preparation of dissertations. The University participates in the service for publication of doctoral dissertations provided by University Microfilms. Each abstract is published in **"Dissertation Abstracts,"** along with a positive copy which is sent to the Library of Congress. The doctoral candidate is advised to check with Prescott Memorial Library concerning this program.

Examinations and Admission to Candidacy

After completion of a minimum of two full academic years of graduate work after compliance with any other requirements of the appropriate academic college, comprehensive examinations (general examinations) are required to determine whether the student is ready to be admitted to candidacy for the doctoral degree. The results of these examinations may also determine additional work to be taken and may determine the feasibility of the dissertation project.

An examination defending the dissertation must be completed successfully at least two weeks prior to the date the degree is expected to be received.

Residence Requirement

The minimum residence requirement for the doctoral degree shall be eight quarters beyond the bachelor's degree. The student is required to spend at least three quarters beyond the first year of graduate study in continuous residence. The transfer of course work from a recognized graduate school carries with it the transfer of residence credit, but a minimum of 24 semester hours of graduate credit beyond the first year of graduate study must be earned in residence at Louisiana Tech University.

Time Limitation

The doctoral degree must be completed within 6 consecutive calendar years after the successful completion of the student's comprehensive (general) examinations. Failure to do so will result in the student's immediate suspension from the doctoral degree program. Reinstatement appeals should be directed to the Dean of the Graduate School and the Graduate Council through the college director of graduate studies. The Graduate Council shall stipulate the conditions of possible reinstatement. The Dean of the Graduate School administers and coordinates the graduate programs of the University. Graduate instruction is supervised by the appropriate academic deans, directors of graduate studies, department heads, and graduate faculty under policies set forth by the University of Louisiana System and the Graduate Council chaired by the Dean of the Graduate School. The President of the University is the final local authority in the operation of the graduate program.

Graduate Program
Interdisciplinary Ph.D. Program
in
Computational Analysis & Modeling (CAM)

Officers of Instruction

Chee Hung Ben Choi
Ass't Professor, Computer Science
Weizhong Dai
Assoc. Professor, Mathematics & Statistics
Richard J. Greechie (Coordinator)
Professor, Mathematics & Statistics
Raja Nassar
Professor, Mathematics & Statistics
Bala Ramachandran
Academic Director, Chemistry & Physics
Assoc. Dean for Research & Graduate Studies,
College of Engineering and Science

Admission Requirements

1. A master's degree in one of the science or engineering disciplines is recommended but not required. Exceptional students with a bachelor's degree in an appropriate area will be considered.
2. A GRE score of at least 1150 (V+Q)
3. International students are required by the Graduate School to submit an official TOEFL score of 550 or higher before their application will be evaluated.

Doctor of Philosophy in Computational Analysis and Modeling (Ph.D.)

The Ph.D. program in Computational Analysis and Modeling is an interdisciplinary doctoral degree program with participation from the College of Engineering and Science and the College of Applied and Natural Sciences.

The program is intended to produce professionals who have a firm grasp of the fundamentals of mathematical modeling and who have the expertise to implement, analyze, and evaluate such models using state-of-the-art computing environments and advanced visual data analysis techniques.

Persons who hold a master's degree in a branch of the physical or biological sciences, engineering, computer science, or mathematics are eligible for admission to the program. Students with baccalaureate degrees may be admitted in exceptional cases. Application forms are available from the Graduate School or the Office of the Associate Dean for Research and Graduate Studies, College of Engineering and Science. Applicants will be required to submit undergraduate and graduate transcripts, current GRE scores and three letters of recommendation.

Core Requirements, Course Work and Dissertation

Typically, 72 hours of graduate work will be required for the degree. The Core consists of 15 graduate hours of mathematics, 9 graduate hours of computer science, and 9 graduate hours of an area of application chosen from chemistry, physics, biology, forestry, statistics, or a participating engineering discipline. An initial plan of study must be submitted by the end of the first quarter of study. The remaining hours of graduate work will consist of courses designated by the student's committee, including research hours for the dissertation.

The student's area of application must be declared within his/her first year in the program. NOTE: The dissertation need not be written in the area of application. It may be written in mathematics, computer science, or possibly another area included in this program. The topic of the dissertation will be the Area of Specialization.

Student's Committee

Each student will be assigned an **Interim Committee** no later than his/her second quarter in the program. This committee will consist of at least 3 members, one from Mathematics and Statistics, one from Computer Science and one from the student's area of application, if such has been declared. A Doctoral Committee will replace the student's interim committee within one year of his/her having passed the qualifying exam. Each student's Doctoral committee shall consist of a minimum of 4 members of the graduate faculty, approved by the steering committee after consultation with the relevant departments. It will be composed of the major professor (once one is chosen), at least one representative from the mathematics and statistics program, at least one from the computer science program, and at least one from the student's area of specialization. This committee will work with the student to design suitable work for the degree.

Exam Structure, Candidacy and Time Limitation

The **qualifying exam** will consist of written examinations in mathematics and in computer science and an appropriate exam in the area of application. The qualifying exam in the area of application may consist of the master's degree in that area. Special permission from the Dean of the Graduate School is required to take any one of these exams more than twice.

Within one year of passing the qualifying exam, a student is normally expected to pass a **comprehensive exam** in his/her area of specialization (which may be mathematics, computer science, the area of application, or some other area included in this program). The comprehensive exam will include a lecture followed by a question/answer period on the student's proposed dissertation topic that exhibits a clear demonstration of an understanding of the principles and methods involved in his/her proposed area of specialization.

After the student has successfully passed the comprehensive examination, the student will be admitted to **candidacy**. The student must complete the dissertation and pass the **dissertation defense exam** within six years after being admitted to candidacy. The student's Doctoral Committee administers the dissertation defense exam. It will, in most cases, consist of an open public defense of the results of the dissertation. This final exam must be successfully completed at least two weeks prior to the date the degree is expected to be received.

Those serving on the doctoral committee must recommend, with at most one dissent, that the student has satisfactorily passed the dissertation defense exam.

Timetable

Matriculation - Interim Committee assigned no later than a student's second quarter in the program. An initial plan of study must be submitted by the end of a student's first quarter of study. Area of application must be declared within the first year.

Qualifying Exam - 1st Fall Quarter following three quarters in the program. Written examinations in mathematics and

computer science; appropriate exam in area of application (may consist of master's degree).

Doctoral Committee - Chosen within 1 year of passing the qualifying exam. Minimum of 4 members appointed as described above.

Comprehensive Exam - (In the area of specialization, the area in which the dissertation is written) Within 1 year of passing the qualifying exam.

Admitted to Candidacy - Upon passing the comprehensive exam, the student now has a maximum of 6 years to complete the dissertation and pass the dissertation defense exam in order to graduate.

Graduate Programs
College of Administration and Business

Officers of Instruction

Dean
Gene H. Johnson
Assoc. Dean for Graduate Affairs & Academic Research
Marc C. Chopin
Assoc. Dean for Finance and Administration
Elizabeth A. Wibker
Director, Division of Business & Economic Research
Marc C. Chopin
Head, Department of Economics & Finance
Dwight C. Anderson
Head, Department of Management & Marketing
Mark Kroll
Head, Department of Business Analysis & Communication
Thomas L. Means
Director, School of Professional Accountancy
Thomas J. Phillips, Jr.,

The College of Administration and Business offers the Master of Business Administration degree, the Doctor of Business Administration degree, and the Master of Professional Accountancy degree. The Undergraduate Division provides a broad range of programs. The third division of the college, the Research Division, has an extensive and growing research program.

Graduate programs in business are designed to prepare students to engage in professional and/or administrative careers in business and government, and to enter the academic community. Students may enter the masters and doctoral programs any quarter. Each graduate student has an advisor to help plan his/her program and tailor it to individual needs and objectives. In the college, no grade lower than "C" will be accepted on courses taken for graduate credit in a student's degree program. Also, no more than two "C"s will count toward a graduate degree. All courses pursued for graduate credit will be counted in the grade point average. To receive a graduate degree, a student must have an average of at least 3.0 on all work pursued for graduate credit while registered at Louisiana Tech.

Accreditation

The baccalaureate and master's programs in accounting and business are accredited by the The International Association for the Advancement of Colleges and Schools of Business (AACSB). Louisiana Tech University is accredited by the Southern Association of Colleges and Secondary Schools (SACS). This accreditation covers the College of Administration and Business as one of the five colleges of the University and includes all curricula offered by the College. The Research Division, College of Administration and Business, is a fully accredited member of the Association for University Business and Economic Research (AUBER).

Graduate Assistantships

A limited number of graduate assistantships are available each year to students of high academic accomplishment. The stipend for graduate assistants is $7,200. The graduate student who holds an assistantship is expected to carry a reduced classwork load that will vary depending on scholastic record and amount of work required by the assistantship. Teaching assistantships are awarded to doctoral students. The salary paid for these part-time teaching assignments is $15,000 annually.

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

The purpose of the Master of Business Administration (MBA) program is to offer an educational experience in business and management at the graduate level. The program is designed to provide breadth in exposure to the business disciplines and facilitate integration of knowledge of the various disciplines. It is an interdisciplinary and interdepartmental degree program offered by the Graduate Division and the academic departments of the College of Administration and Business. Ethical concerns and international issues are emphasized throughout the curriculum.

The interdisciplinary nature of the program is in consonance with the needs of future administrators. The acquisition of knowledge of many facets of administrative activities, the accumulation and organization of relevant information, and the identification and solving of complex business problems require such an interdisciplinary approach.

The curriculum leading to the MBA is administratively oriented and is characterized by breadth of course-field requirements. It does not require and, in fact, does not permit a major in any particular field. However, many students desire a modest concentration in an area such as Accounting, Computer Information Systems, Economics, Finance, International Business, Management, Marketing, or Quantitative Analysis. Such concentrations will consist of a minimum of nine hours and, as such, will increase the total number of hours necessary to complete the program. The courses to be taken by a student seeking a concentration will be determined by the student's advisory committee and approved by the Associate Dean for Graduate Affairs and Academic Research. Also, scheduling and resource constraints may limit the availability of concentrations from time to time.

Objectives and Outcomes

During the MBA program students will:

- Examine the theory, principles and knowledge necessary to manage modern business enterprises effectively.
- Work in teams to formulate solutions to complex business problems.
- Develop an awareness of the issues and questions faced be those in leadership positions.
- Design and communicate solutions to case studies and real world problems.

Admission Requirements

To qualify for admission to the MBA program, applicants must meet the admission requirements of the Graduate School of the University and the admission requirements of the Graduate Division of the College of Administration and Business. Any applicant who holds a bachelor's degree, or equivalent, from an accredited college or university will be considered for admission regardless of the undergraduate field of study. An applicant for admission should understand that graduate work is not merely an extension of undergraduate work. Graduate study operates at a significantly higher level of rigor, demands scholarship of a higher order, and places more emphasis on research and student responsibility.

Once the admission requirements of the Graduate School have been met, the MBA Admissions Committee will grant

admission only to those individuals who demonstrate significant accomplishment and/or high potential for success. The decision of the Admissions Committee is normally based on a combination of the applicant's previous academic record and the applicant's score on the Graduate Management Admission Test (GMAT). For unconditional admission to the MBA program, the College of Administration and Business requires that students earn at least 450 on the GMAT exam and to have an undergraduate GPA of at least 2.75. Applicants not able to meet the minimum GPA or GMAT requirements may be considered for conditional admission to the MBA program if their composite score (equal to 200 x UGPA + GMAT score) is at least 1,100 (1,150 when calculated using the GPA from the applicant's last 60 credit hours). Also, significant business experience may serve as an indicator of an individual's ability to complete the program, and thus may be considered by the Committee.

Foundation Requirements

Students entering the MBA program may come from areas other than business, but need to demonstrate a knowledge base sufficient to enable them to complete graduate-level work in business. Evidence of such foundation knowledge can consist of the completion of undergraduate courses constituting a business core, recent business experience, and/or satisfactory performance on the GMAT. At a minimum, each student is presumed to be computer literate and to have had recent, college-level course work in economics (Economics 215), calculus and linear algebra (Quantitative Analysis 390), statistics (Quantitative Analysis 233), and the following core areas:

- financial reporting, analysis, and markets,
- domestic and global economic environments of organizations,
- creation and distribution of goods and services,
- human behavior in organizations.

The Associate Dean for Graduate Affairs and Academic Research of the College of Administration and Business determines the acceptability of all work submitted in satisfaction of the foundation and prescribes appropriate courses to be taken to remove any deficiencies.

MBA Curriculum - General* (M.B.A.)

Quantitative Analysis 525	3
Computer Information Systems 510	3
Economics 510	3
Accounting 505	3
Finance 515	3
Management 510	3
Marketing 530	3
Electives	6
Management 595	3
Total	30

MBA Curriculum - With Concentration* (M.B.A.)

Quantitative Analysis 525	3
Computer Information Systems 510	3
Economics 510	3
Accounting 505	3
Finance 515	3
Management 510	3
Marketing 530	3
Concentration Courses	9
Management 595	3
Total	33

*The student who has recently completed an undergraduate program with specialization (major or minor) in one of the areas of business may be required to substitute a graduate business elective for the course in that area specified in the curriculum. For example, a student with an undergraduate degree in Accounting will be required to take Accounting 508 in lieu of Accounting 505. Upon approval of the Associate Dean for Graduate Affairs and Academic Research, students may transfer up to six hours of graduate credit toward the MBA degree. To be eligible for graduate credit, courses must generally have been taken at a college of business accredited by the AACSB.

The Master of Professional Accountancy Program (M.P.A.)

The Master of Professional Accountancy (MPA) program is designed to provide graduate level education in accounting for individuals seeking rewarding careers in public accounting, industry, and government. To be considered for admission to the graduate phase, students must submit an admissions application, an acceptable score from the Graduate Management Admission Test (GMAT) and meet established GPA requirements. Courses for graduate credit can be taken after completion of the first four years and after final admission to graduate school is attained.

Transcripts of students entering the MPA program at the graduate level are evaluated and proper courses prescribed to satisfy the degree requirements. The undergraduate phase of the MPA program is given in the accounting section of the undergraduate portion of this bulletin.

The normal graduate phase of the MPA program is given below. The graduate phase may normally be completed in one year by accounting undergraduates who have performed satisfactorily in appropriate preparatory work. Upon approval of the Associate Dean for Graduate Affairs and Academic Research, students may transfer up to six hours of graduate credit toward the MPA degree. To be eligible for graduate credit, courses must generally have been taken at a college of business accredited by the AACSB.

Year 5	
Accounting 506 OR 507	3
Accounting 508	3
Accounting 513	3
Accounting 521	3
Accounting Electives**	9
CAB Electives (2 500-level non-accounting)	6
Business Law 410	3
	30

*Total must include at least 15 hours of 500-level Accounting taken at Louisiana Tech.

**Accounting 505 cannot be taken as an elective. Only 6 hours of accounting courses below the 500-level may be taken.

Objectives and Outcomes

The MPA program will:

- Provide students with the knowledge and tools needed to obtain meaningful employment and have successful careers.
- Prepare students for management positions.
- Provide the educational background for students to meet the educational requirements of various accounting certifications.
- Prepare students for a career in accounting.

Additionally, the MPA program has been designed to enable students to achieve the following learning objectives:

- Strengthen students' comprehension of accounting and business.
- Improve students' ability to focus on appropriate issues and develop solutions to problems where needed.

- Further refine students' oral and written communication skills.
- Broaden students' understanding of global issues.
- Expand students' understanding of professional and ethical issues faced by accountants.
- Develop students' ability to appraise the accounting profession critically.

Admission

Admission to the graduate phase of the MPA program is based upon the combination of an applicant's academic record and score on the Graduate Management Admission Test. For unconditional admission to the MPA program, the College of Administration and Business requires that students earn at least 450 on the GMAT exam and to have an undergraduate GPA of at least 2.75. Applicants not able to meet the minimum GPA or GMAT requirements may be considered for conditional admission to the MPA program if their composite score (equal to 200 x UGPA + GMAT score) is at least 1,100 (1,150 when calculated using the GPA from the applicant's last 60 credit hours). Students may enter the program any quarter, and each individual has an advisor to help plan the program.

In addition to meeting the core business courses, the applicant must have satisfactorily completed the following minimum accounting courses:

Accounting Systems	3
Intermediate Accounting *	9
Income Tax	3
Managerial Cost Accounting	3
Advanced Accounting	3
Auditing	3
	24

*Or an equivalent intermediate sequence which is six hours at some universities.

In addition to the above requirements, the applicant must have completed a basic calculus course, a statistics course, and an advanced English writing course. Applicants with deficiencies in these areas must take either Math 222 or Quantitative Analysis 390, Quantitative Analysis 233, and either English 303 or 336.

For information concerning admission to the MPA program, contact the director of the School of Professional Accountancy or the Associate Dean for Graduate Affairs and Academic Research, College of Administration and Business, Louisiana Tech University, Ruston, LA 71272; send an e-mail to cabgrad@cab.latech.edu; or refer to our website: http://www.cab.latech.edu/.

Doctor of Business Administration (D.B.A.)

The Doctor of Business Administration degree is a professional degree at the highest level of formal study in business administration. It is intended to develop the breadth and depth of comprehension, the command of research methodology, and the understanding of related disciplines required for careers in university teaching and research, or for high-level professional and administrative positions in business, government, education, or other organizations. The Doctor of Business Administration degree is a broad, interdisciplinary degree. The D.B.A. candidate must expect to exhibit or develop a high level of competence and skills of individual inquiry and original research which characterize the doctorate. The student will work under the close supervision of a major professor and an Advisory Committee.

Objectives and Outcomes

While completing their program of study, D.B.A. students will develop and demonstrate the depth and breadth of their analytical and empirical skills by:

- Identifying and developing research projects relevant to the business disciplines, culminating with the preparation and defense of a dissertation.
- Contributing to the body of knowledge in their chosen discipline by submitting research papers to refereed journals for consideration for publication or for presentation at professional meetings and conferences.
- Being prepared to teach in accredited universities.

Field and Related Requirements

The Doctor of Business Administration degree program requires knowledge to be developed in three subject areas chosen from the following fields: Accounting, Computer Information Systems, Economics, Finance, Management, Marketing, and Quantitative Analysis. Also, research support courses in mathematics, statistics, computer languages, and other selected fields will be chosen according to the major field of the student. Regardless of the specific fields used by the D.B.A. student, the student must normally show credit for at least one course for graduate credit in each of these: Accounting, Computer Information Systems, Economics (normally two courses), Finance, Management (normally Business Policy), Marketing, Research Methods, and Statistics. There is no requirement of a foreign language for the D.B.A. degree.

Admission to the D.B.A. Program

To qualify to be considered for admission to the D.B.A. program, applicants must meet the graduate admissions requirements of the Graduate School and the College and the doctoral admissions requirements of the Graduate School. If these requirements have been or can be met, the application will be reviewed by a doctoral admissions committee to determine personal characteristics, research interest and capability, motivation and perseverance, and promise of success in high-level advanced study. The following requirements must also be met by applicants:

The academic record and score on the Graduate Management Admissions Test (GMAT) must demonstrate sufficient promise to indicate that they are qualified to perform successfully in the D.B.A. program. More emphasis will be placed on applicants' graduate record if they have already earned the master's degree than on their undergraduate record.

Steps in applying for admission and in obtaining an admission decision are as follows:

1. Arrange to take the Graduate Management Admission Test by calling (800) GMAT - NOW. Request that your test score be sent to the Associate Dean for Graduate Affairs and Academic Research, College of Administration and Business (code 6372), Louisiana Tech University, Ruston, LA 71272.
2. For an application for admission form write to The Graduate School, Louisiana Tech University, P. O. Box 7923, Ruston, LA 71272, or download an application from our website: http://www.cab.latech.edu/. Return the completed application to this same address.
3. Request all colleges and universities attended at any time in the past to send official transcripts to the address in No. 2 above.
4. Request three persons who know your qualifications for doctoral study to serve as references. Ask them to mail their letters of recommendation directly to the Associate Dean for Graduate Affairs and Academic Research,

College of Administration and Business, Louisiana Tech University, Ruston, LA 71272. These letters should be submitted before or by the time the application is made. Also, the applicant should send a current resume to the same address.

5. When the above four steps have been completed, an invitation may be extended to come to the campus for an oral admissions examination. The admission decision will be made by the D.B.A. Admissions Committee after this examination, but all admissions credentials will be used in making this decision.

Hours Required and General Examinations for the D.B.A. Program

A minimum of 60 semester credit hours of graduate course work is required beyond the bachelor's degree exclusive of credit for dissertation research and Current Topics in Research Seminar. The Advisory Committee will decide the number of credit hours which students must take to provide the necessary strength in their fields.

Upon completion of the course requirements, written and oral comprehensive examinations are administered. After all examinations are completed, the student will be admitted to candidacy status. After the completion of the dissertation, there will be administered a final oral examination in defense of the dissertation. All examinations are to be taken on the main campus under the direct supervision of appropriate faculty members.

Dissertation

Credit and progress in the dissertation will be provided by registration in Administration and Business 690. A final oral examination will be administered after the dissertation is completed.

Residence Requirements

A minimum of three consecutive quarters and a minimum of 24 semester credits, exclusive of research and dissertation credit, beyond the masters degree or its equivalent are required to be taken on the Louisiana Tech campus. The student's Advisory Committee may specify additional residential course work beyond the minimum of 24 credit hours.

Candidacy and Time Limitation

After the student has successfully passed the general examination, the student will be admitted to candidacy. The student must complete the dissertation and pass the final oral examination (defense of the dissertation) within a maximum of three calendar years after being admitted to candidacy, with up to two one-year extensions. Students must request an extension of the three-year time limit in writing. Such a request must include a discussion of the reasons for the extension, a description of the work completed to date, and a projected timetable for completion of the dissertation. The final oral examination (defense of the dissertation) must be completed successfully at least two weeks prior to the date the degree is expected to be received.

Additional Information

Request additional information from Associate Dean for Graduate Affairs and Academic Research, College of Administration and Business, P. O. Box 10318, Louisiana Tech University, Ruston, Louisiana 71272. Telephone (318) 257-4528; send an E-mail to cabgrad@cab.latech.edu; or refer to our web site: http://www.cab.latech.edu/.

Graduate Programs
College of Applied and Natural Sciences

Officers of Instruction

Dean
Shirley P. Reagan
Assoc. Dean for Graduate Studies & Research
William J. Campbell
Assoc. Dean for Undergraduate Studies
James D. Liberatos
School of Biological Sciences
David Mills, Director
School of Human Ecology
Janet F. Pope, Director

Address

More information about the College of Applied & Natural Sciences can be obtained by writing and/or visiting the College's web site:

College of Applied & Natural Sciences
P.O. Box 10197
Louisiana Tech University
Ruston, LA 71272
(318) 257-4287
http://www.ans.latech.edu

The demand for individuals with education beyond the bachelor's degree in applied and natural sciences disciplines is continually increasing in many areas of public service and private industry. Graduate programs to encourage and to nurture expanded investigation in specific areas of interest have developed to meet this demand.

Financial Aid

A limited number of university and externally funded graduate assistantships are available on a competitive basis. Students holding assistantships have out-of-state fees waived. Thesis students are encouraged and assisted by individual advisors, to apply for external research funds. Graduate students may also be employed as student workers. The Merle Burke, Willie Fletcher, and Jeanne Mack Gilley scholarships, described in the Applied and Natural Sciences general section of the Bulletin, are available for Human Ecology students. For additional information concerning financial aid, contact either the Director of the School of Biological Sciences or the Director of the School of Human Ecology.

School of Biological Sciences

The School of Biological Sciences offers programs of study leading to the Master of Science in Biology with concentrations in the areas of cell and molecular biology, environmental biology, and organismal biology. Students can pursue a thesis option (30 semester hours) or a non-thesis option (36 semester hours).

Admission

In addition to meeting the general admission requirements of the Graduate School, applicants must have earned a bachelor's degree with not less than 30 semester hours in biology, chemistry through organic with laboratories, and mathematics through college algebra. Applicants must also submit their scores on the General Test of the Graduate Record Examination (GRE). Students may be admitted to the graduate program in Biological Sciences with either unconditional or conditional admission status. For unconditional admission, an applicant must possess a minimum GPA of 3.0 and a score of at least 1800 calculated using the formula: **(GPA x 200) + (Verbal GRE + Quantitative GRE + Analytical GRE) = 1800.** For conditional admission, an applicant must possess a minimum GPA of 2.5, and a score of at least 1600 calculated using the formula: **(GPA x 200) + (Verbal GRE + Quantitative GRE + Analytical GRE) = 1600.**

Each graduate student will select a Graduate Advisory Committee for the purpose of counseling and guidance through the graduate program. Undergraduate course work submitted must be evaluated for acceptance by the student's Graduate Advisory Committee. Graduate students who have not completed the minimum background for their chosen concentration are expected to satisfy these deficiencies in the initial stage of their graduate program.

Program of Study

Thesis Plan

The program of study for the degree of Master of Science in Biology in the Thesis Option consists of a minimum of 30 semester hours of graduate credit of which at least 15 hours must be taken in 500-level courses. Required courses include Research Methods in Biological Sciences (BISC 502), Biological Sciences Seminar (BISC 509), Current Topics in Biological Sciences (BISC 535), 9 semester hours of electives in the concentration area, 6 semester hours of general electives, and 3 semester hours of statistics. A maximum of six semester hours of credit for Biological Sciences Special Problems (BISC 530) combined with Biological Sciences Internship (BISC 540 and BISC 541) can be used toward the thesis degree. Enrollment in BISC 551 is required each quarter the student is using university resources (faculty time, laboratories, computing facilities, etc.) for thesis work. A maximum of six semester hours of BISC 551 is granted as partial fulfillment of the degree plan. The student will pursue original research in the student's specialized field of interest, supervised by a thesis advisor and approved by the student's Graduate Advisory Committee. Completion of the Thesis Option includes an oral defense of the thesis and oral examination, conducted by the student's Graduate Advisory Committee.

Non-Thesis Plan

The program of study for the degree of Master of Science in Biology in the Non-Thesis Option consists of a minimum of 36 semester hours of graduate credit of which at least 18 hours must be taken in 500-level courses. Required courses include Research Methods in Biological Sciences (BISC 502), Biological Sciences Seminar (BISC 509), Applied Biological Sciences Research (BISC 517), Current Topics in Biological Sciences (BISC 535), 12 semester hours of electives in the concentration area, 12 semester hours of general electives, and 3 semester hours of statistics. No more than six semester hours of credit for Biological Sciences Special Problems (BISC 530) combined with Biological Sciences Internship (BISC 540 and BISC 541) can be used toward a graduate degree. Non-thesis graduate students are required to pass comprehensive written and oral examinations conducted by the student's Graduate Advisory Committee.

Research Activities

Faculty members conduct a wide range of research that may serve as the basis for student theses and independent study projects. Students interested in pursuing research at the graduate level are encouraged to contact the appropriate graduate faculty members, the Director of the School of Biological Sciences, or the Associate Dean for Graduate Studies and Research. Information describing faculty research areas is available directly from the faculty, from the College of Applied & Natural Sciences, or online at www.ans.latech.edu, the College web site.

School of Human Ecology

The School of Human Ecology has been given the authority to grant Master of Science degrees in Family and Consumer Sciences and Nutrition and Dietetics. The Master of Science in Nutrition and Dietetics is awarded only to individuals who have met the requirements to take the examination to be a Registered Dietitian. Within these degrees, the student should select an area of concentration. The areas that have been defined include the following:

Family and Consumer Sciences (M.S.)
- Early Childhood Administration Concentration
- Early Childhood Education Concentration
- Family & Consumer Sciences Education Concentration
- Family & Child Development Concentration
- Human Ecology Concentration

Nutrition and Dietetics (M.S.)
- Clinical Dietetics Concentration
- Community Dietetics Concentration

Dietetic Internship

The Dietetic Internship is a four-quarter program providing the performance requirements to take the registered dietitian examination. Graduates of an approved didactic program may apply for admission to the dietetic internship.

The program is implemented through facilities in Shreveport, Ruston/Monroe, and Alexandria. Students are assigned to facilities in one city to minimize the amount of travel required.

The dietetic internship students enroll in Graduate School and receive both undergraduate and graduate credit while completing the program. Students are required to enroll in seven hours of graduate credit during the Summer Quarter and four hours of graduate course work during fall, Winter, and Spring. Students are encouraged to complete the Master of Science degree although receipt of the Dietetic Internship verification statement does not require completion of the M.S. degree.

Accreditation

Graduate programs support undergraduate degree Programs in human ecology education which are included in the University accreditation by the National Council for Accreditation of Teacher Education and approved for certification by the Louisiana State Department of Education. The human ecology teacher preparation programs are maintained through the joint activities of the faculty of the School of Human Ecology and the Louisiana Tech University Teacher Education Council.

The School of Human Ecology is an official member of the AAFCS Higher Education Unit. The undergraduate programs are accredited by the Council for Accreditation of the American Association of Family and Consumer Sciences and approved by the American Dietetic Association.

The Dietetic Internship is accredited by the Commission on Accreditation/Approval for Dietetic Education of the American Dietetic Association (216 West Jackson Boulevard, Chicago, IL 60606), a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and the United States Department of Education.

Admission

In addition to the general admission requirements for the Graduate School, an applicant must have a bachelor's degree from an accredited college or university with a major in human ecology or in a related field. The undergraduate grade point average and Graduate Record Examination scores are used to make admission decisions. For more information, contact the Associate Dean for Graduate Studies and Research in the College of Applied and Natural Sciences.

Students whose performance in oral and written communication is unacceptable may be asked to complete courses to remedy the deficiency. In addition, at the discretion of a student's Advisory Committee, the student may be required to enroll for additional human ecology courses where deficiencies exist.

Requirements for Graduation for the Master of Science Degree in the School of Human Ecology

1. a. Thirty-six semester hours (non-Thesis), or
   b. Thirty semester hours which include six hours of credit in Human Ecology 551, Research and Thesis.
2. A grade point average of 'B' on all graduate work pursued.
3. A minimum of one-half of the hours in courses given exclusively for graduate credit.
4. Credit in Human Ecology 504, Methodology in Human Ecology Research; Human Ecology 546, Microcomputer Applications; and Statistics 402, Introduction to Statistical Analysis.
5. Completion of a thesis or multi-quarter independent study.

With the guidance of the Advisory Committee, each student will develop an individualized plan of study according to the selected area of study. Recommended courses are listed in the Graduate Student Handbook for the School of Human Ecology. Students should contact the Office of the Associate Dean for Graduate Studies and Research in the College of Applied and Natural Sciences for information about the Handbook.

Research Activities

Faculty in the School of Human Ecology are involved in numerous areas of research which may serve as the foundation for graduate students' theses and independent studies. Current major areas in Family and Consumer Sciences relate to young and older adults (e.g., close relationships, abstinence education for teenagers, intergenerational mentoring), children (e.g. child care availability, infant and toddler development, children's dietary intake and body images, preschool education methodology and teaching strategies, and developmentally appropriate practice), and shopping behaviors (e.g., the older shopper, behavior related to dress and image, and fashion cycles). Nutrition and Dietetics includes nutritional and dietary assessment (e.g., dietary fat intake, calcium intake, fruit and vegetable intake, use of dietary supplements, risk factors for cardiovascular and osteoporosis diseases, and effects of size acceptance and body image perception on food intake), life cycle effects (e.g., maternal and child nutrition, and geriatric nutrition), food service management (e.g., environmental issues, financial, and employee productivity), and education (e.g., dietetic, and education factors that influence dietary intake).

Graduate Programs
College of Education

Officers of Instruction

Dean
Jo Ann Dauzat
Assoc. Dean, Graduate Studies, Research, & Development
Cathy Stockton
Assoc. Dean, Undergraduate Studies & Director,
Professional Laboratory Experiences
Connie LaBorde
Head, Curriculum, Instruction, & Leadership
David E. Gullatt
Head, Health & Physical Education
James Heimdal
Interim Head, Psychology & Behavioral Sciences
Tony Young

Mission

The mission of the College of Education is three-fold:

- to provide high quality educational experiences for current and prospective professionals from baccalaureate through doctoral levels;
- to enhance and extend the knowledge bases undergirding professional programs through research and other scholarly activities;
- to deliver professional services to the various business, civic, and educational communities through collaborative endeavors.

The mission is fostered through the following goals of the College of Education.

1. Continuously refine curricula and instructional procedures ensuring the best research, theory, and professional practice in all programs.
2. Provide clinical and laboratory experiences enabling program graduates to function proficiently in diverse professional and cultural settings.
3. Enable program graduates to serve as change agents through implementation of innovative ideas, strategies, research, and technology.
4. Provide personal and professional development opportunities for students and faculty.
5. Encourage research and development initiatives designed to extend knowledge and solve problems in appropriate human service fields.
6. Promote faculty and student leadership in organizational service, publications, research, and other scholarly endeavors.
7. Design and deliver needs-based programs and services with appropriate constituencies.
8. Implement, evaluate, and refine plans to recruit and retain diverse faculty and student body.

Accreditation

The College of Education, one of five colleges of Louisiana Tech University approved by the University of Louisiana System, is accredited by the Southern Association of Colleges and Schools. As an individual unit, it is a member of the American Association of Colleges for Teacher Education and of the American Association of Business Teachers. Degree programs offered by the College of Education at the undergraduate and graduate levels are accredited by the National Council for the Accreditation of Teacher Education.

Division of Graduate Studies

The Division of Graduate Studies is administered by the Associate Dean, Education Graduate Committee, Graduate Faculty, Department Heads, and the Dean of the College. The purpose of the Graduate Studies Division is to encourage excellence in teaching, research, and service for the College of Education faculty and to administer all graduate programs offered by the College of Education.

The Education Graduate Committee consists of three Graduate Faculty appointed by the Dean of the College from the departments of Curriculum, Instruction, and Leadership; Psychology and Behavioral Sciences; Health and Physical Education; and one graduate student. Actions of the Education Graduate Committee are subject to approval of the Dean of the College and, when appropriate, the Teacher Education Council, the University Graduate Council, and the Dean of the Graduate School.

The Associate Dean administers the graduate programs in accordance with approved procedures. The Education Graduate Committee, chaired by the Associate Dean, establishes and reviews admission/retention policies, acts on new program or course proposals, and reviews appeals for readmission.

A Review Committee, consisting of all graduate faculty, examines the credentials of graduate faculty applicants for evidence of continued scholarly productivity according to published criteria. Recommendations for membership on the graduate faculty are then made to the Dean of the College of Education and the Dean of the Graduate School.

Degrees Conferred

The College of Education offers programs leading to the Master of Arts, the Master of Science, the Master of Education, the Doctor of Education, and the Doctor of Philosophy degrees.

The Master's Degree Programs

Master's degree programs are offered in the Departments of Psychology and Behavioral Sciences, Health and Physical Education, and Curriculum, Instruction, and Leadership.

The Psychology and Behavioral Sciences Department offers the Master of Arts degree in Educational Psychology, Counseling and Guidance, and Industrial/Organizational Psychology.

The Health and Physical Education Department offers the Master of Science degree in Health and Physical Education. Candidates may select one of the following concentrations: Teacher Preparation, Adapted Physical Education, Exercise Science, and Sports Science. The programs in Teacher Preparation and Adapted Physical Education require teacher certification for admission to these programs.

The Curriculum, Instruction, and Leadership Department offers the Master of Science in Curriculum and Instruction and the Master of Education program in both elementary and secondary education. The Master of Education leads to teacher certification while the Master of Science Degree is intended for already certified teachers.

The Master of Education (M.Ed.) Fifth-Year Program is designed for liberal arts and sciences graduates who seek initial certification in a teaching area and a master's degree. Certification areas for the M.Ed. degree include Art Education,

Business Education, Elementary Education, English Education, Foreign Languages Education, Health and Physical Education, Mathematics Education, Music Education, Science Education, Social Studies Education, Speech Education, and Vocational Agriculture Education.

Graduate students in the College of Education, along with graduate students in the other academic colleges, are eligible to compete for University Graduate Assistantship positions. Inquiries concerning these assistantships should be directed to the college Office of Graduate Studies.

Admission Requirements

In addition to the general admission requirements of the Graduate School, a student seeking a Master of Science degree in any of the teaching areas must hold a teaching certificate for the area. In addition, students seeking the Master of Arts in Educational Psychology and in School Counseling must also hold a teaching certificate. Students desiring to enter a master's program in the College of Education should submit a Graduate Record Examination (GRE-General) score before or at the time of application. For conditional admission, students must have a GPA of 2.25 on all hours pursued or 2.50 on the last 60 hours (excluding the M.Ed. candidates). For unconditional admission, students must have a GPA of 2.50 on all hours pursued or 2.75 on the last 60 hours. Students entering the M.Ed. degree must have a minimum cumulative GPA of a 2.50 and present evidence of satisfactory completion of the PRAXIS Reading, Writing, and General Knowledge Tests.

Following review of the undergraduate GPA, an admissions formula is calculated. The formula is GPA x 200 plus GRE V plus Q. Conditional admission is granted to those who have 1200 points while unconditional admission is granted to those with 1300 points or more. Conditional status is removed upon earning a GPA of 3.0 on nine graduate credits.

New students who have not taken the GRE will be admitted to Graduate School "on condition" if their grade point averages are satisfactory. They must submit acceptable GRE Scores during their first quarter of enrollment or be dropped from graduate status.

A maximum of nine (9) semester hours earned at Louisiana Tech in a non-degree status and prior to admission to the Master's degree program may be included in the 33-36 semester hours of required work.

Please note that graduate credit cannot be awarded for any 300- level courses and only certain 400-level courses are approved to receive graduate credit.

A comprehensive examination must be passed during the last quarter of enrollment in the student's program.

Department of Curriculum, Instruction, & Leadership

Master of Science in Curriculum & Instruction (M.S.C.I.)

The candidate seeking a Master of Science degree in Curriculum and Instruction will be required to earn a minimum of 36 semester hours which may include 6 hours credit for a thesis. **An approved plan of study must be submitted during the first quarter of enrollment.**

Required core courses for the degree include:
Education 541, Introduction to Graduate Study and Research; Education 572, Education Foundations and Public Policy; Education 521, Assessment of Students and Programs; Education 522, Instructional Theory and Practice; and Education 526, Curriculum Development. The student may choose one of the following: Education 575, Practicum; Education 471, Classroom Management; Education 524, Supervision of Student Teachers; an education elective; or Education 551, Research and Thesis (6 hours).

To complete the 36 hour program, students choose a **cognate** of 15 hours (12 hour **concentration** from a designated area plus a three hour elective) which may lead to an additional area of certification. **Candidates may choose from the areas of adult education, early childhood, computer literacy, reading, middle grades, special education, fifteen hours in a subject area, elementary or secondary principalship, special education, and/or supervisor of instruction.** Additional information regarding the cognate areas may be obtained from the Head of Curriculum, Instruction, and Leadership or from the Director of Graduate Studies.

Advisors will assist candidates in developing a Plan of Study during the first quarter of enrollment. No more than nine hours may be transferred toward this degree with the approval of the advisor, department head, and college Director of Graduate Studies. No deviation can be made from the plan of study without prior permission of the advisor.

Master of Education (M.Ed.)

The M.Ed. program in Early Childhood Education (PK-3)
The M.Ed. program in Elementary Education (1-6)
The M.Ed. program in Middle School Education (4-8)
The M.Ed. program in Special Education
Mild/Moderate (1-12)
The M.Ed. program in Secondary Education (7-12)

In compliance with the State of Louisiana Board of Regents, the College of Education is currently redesigning all elementary and secondary teacher certification programs.

Programs in the following certification areas are pending approval for 2002-2003 implementation:

- **PK-3 (early childhood);**
- **1-6; 4-8 (middle grades mathematics or science);**
- **7-12 (in discipline areas of: Agricultural Education, Business Education, Elementary Education, English Education, Foreign Language Education, Mathematics Education, Science Education, Speech Education, and Social Studies Education; and**
- **Special Education—Mild/Moderate (1-12)**

For further information on education degree programs offered by Louisiana Tech University, please contact the specific departments for information. New curricula will be published in the 2003-2004 Bulletin.

A Master's paper will be guided and approved by the advisor and completed prior to the fourth week of the final quarter. The professional knowledge and area specialty components of the PRAXIS and a comprehensive examination must be successfully completed before the candidate is recommended for the M.Ed. and teacher certification. A professional portfolio must be completed during the internship quarter.

In addition to successfully completing the coursework, the following are graduation requirements:

1. Passing scores on remaining parts of PRAXIS must be on file before graduation. Score requirements are listed by various degrees in the booklet under "Louisiana."

2. Successful completion of the Speech and Hearing Test given by the Tech Speech Department must be recorded.
3. The Master's paper must be signed by the advisor and graduate director by the final quarter.
4. A comprehensive examination must be passed in the final quarter or in the quarter immediately prior to commencement of the student's internship.

Department of Health & Physical Education

Master of Science in Health & Physical Education (M.S.H.P.)

The candidate seeking a Master of Science degree in Health and Physical Education will be required to earn 36 semester hours which may include 6 semester hours for a thesis. The program in Health and Physical Education offers opportunities for various career interests providing **concentration areas in teacher preparation, adapted physical education, sports science, and exercise science.** The teacher preparation and adapted physical education concentration areas require a valid teaching certificate in physical education issued by the Louisiana State Department of Education or its equivalent. The sports science and exercise science concentration areas do not require teacher certification for admission to the program.

The **teacher preparation concentration** is designed for individuals interested in teaching physical education at the elementary and/or secondary level. The teacher preparation concentration requires 18 hours in health and physical education classes, 6 hours of health and physical education electives, 6 required hours in professional education, and 6 elective hours in education.

The **adapted physical education concentration** is provided for individuals interested in teaching adapted physical education in a school setting. Twenty-one hours are required in health and physical education, 6 hours are required in professional education, and 9 elective hours may be chosen from related areas within the University. Upon completion of the degree with an Adapted concentration, the candidate will be certified to teach adapted physical education in Louisiana.

The **exercise science concentration** is available for individuals interested in exercise physiology. Eighteen hours of health and physical education classes are required with 6 elective hours in health and physical education, 3 required hours in professional education, and 9 elective hours from related fields from any college within the University.

Department of Psychology & Behavioral Sciences

Master of Arts in Counseling & Guidance (M.A.C.G.)

The counseling and guidance M.A. program is designed to prepare counselors for counseling and human service positions in educational institutions and other agencies. The program provides enrollees with basic preparation in counseling and psychology with various elective options offered to prepare counselors for particular institutional settings, e.g., educational, mental health, and community service agencies.

Two concentrations are offered in this field: school counseling, and general (community) counseling. Consistent with state certification requirements, elementary and secondary counseling curricula have been combined into a single school counseling concentration. The school counseling concentration requires 33 semester hours of study including a practicum in a school setting. The general counseling concentration requires completion of a 48-semester hour curriculum (including a practicum and two internship courses.) The school counseling concentration is available on both the main campus and the Barksdale AFB campus. The general counseling concentration is offered on the main campus only. The general counseling concentration prepares students for Licensed Professional Counseling roles, the school counseling concentration for certified school counselor roles. Students should consult their advisors for current degree requirements. Counseling & guidance M.A. general counseling concentration students must submit three letters of reference, a statement of purpose, GRE scores, and transcripts for admission consideration. For more information, contact the Department of Psychology and Behavioral Sciences, P.O. Box 10048, Ruston, LA 71272 or e-mail: psychology@latech.edu .

Master of Arts in Educational Psychology (M.A.E.P.)

The Department of Psychology and Behavioral Sciences offers the M. A. degree in Educational Psychology. **Five areas of concentration are available: Educational Diagnostics, Mild/Moderate, Gifted/Talented, Psychoeducational Research and Evaluation, and Visual Impairments - Orientation & Mobility.** Some of the concentrations require a valid teaching certificate.

For more information on this program, please contact the Department Head, Department of Psychology and Behavioral Sciences, P.O. Box 10048, Ruston, LA 71272 or e-mail to psychology@latech.edu .

Master of Arts in Industrial/Organizational Psychology (M.A.)

Persons trained in Industrial/Organizational Psychology frequently find employment in private and public organizations, consulting firms, and government.

The candidate seeking a Master of Arts degree with a major in Industrial/Organizational Psychology must complete a prescribed course of study (see advisor for current degree requirements). Up to 9 semester hours may be taken in management (to be selected from Management 447, 470, 478, or 537; Management 472, 539, 547; Management 571; and Economics 418 or Management 419). This program requires at least 18 hours credit from academic and/or professional courses designed exclusively for graduate credit.

The Doctor of Philosophy Degree in Counseling Psychology (Ph.D.). The Department of Psychology and Behavioral Sciences offers the Ph.D. degree in Counseling Psychology. The Doctor of Philosophy (Ph.D.) degree in Counseling Psychology embodies a balanced training experience designed to train professional psychologists in the scientist-practitioner model. The scientist-practitioner is prepared to reflect attitudes and competencies arising from the effective internalization and blending of both scientific and counseling approaches. The Counseling Psychology program at Louisiana Tech University is firmly committed to the scientist-practitioner model, hence the primary goal of the program is to produce professional psychologists who are competent in both the conduct of research and professional practice.

Admission Requirements

Application for admission requires a completed Graduate School Application form, Graduate Record Exam (GRE) scores, official transcripts of all college or university work, three letters of reference, a professional vita, and a statement of purpose. Other requisites may be specified by the program and department such as, but not limited to, interviews and statements of intent, philosophy, and professional goals. Students are admitted to the program on a yearly basis during the Fall quarter of each year.

Admission to Louisiana Tech University's Counseling Psychology Ph.D. program is highly competitive. Meeting minimal admission standards of the University or College does not guarantee admission. The Counseling Psychology Admissions Committee carefully reviews all applicants and selects those determined to be best qualified and best suited for training in the profession of Counseling Psychology. In addition to demonstrating evidence of academic competence and

capability, persons selected each year for this program are expected to show personal maturity, interpersonal confidence, and an outstanding ability to accept feedback and work cooperatively with faculty and peers.

Degree Requirements

Students admitted to the program will receive current degree requirements from their advisor. All students must complete required coursework, a qualifying research project, a minimum of 1000 hours in practicum training, a supervision training experience, a dissertation based on original research and a one-year full-time counseling psychology internship. The program is a full-time in-residence (including summers) program normally requiring four to six calendar year to complete.

Advising

At matriculation the student will be appointed a temporary advisor by the department head of Psychology and Behavioral Sciences. By the end of the first quarter of enrollment the student must formally decide upon a permanent advisor and an advisory committee who will assist in creating the plan of study.

Eligibility to Remain in the Doctor of Philosophy in Counseling Psychology Program

Each student's academic performance, progress toward degree completion, and professional performance will be reviewed annually by the Counseling Psychology Core Faculty Training Committee. Reviews may occur more frequently if judged appropriate or necessary by a vote of the Counseling Psychology Core Faculty Training Committee. A student that does not meet the minimal grade point average requirements specified by the Graduate School and Department (a minimum grade point average of 3.0; no grade lower than "C"; no more than six semester hours of "C" grades in the program) or is not meeting professional and ethical standards as determined by the Counseling Psychology Core Faculty Training Committee may be dismissed from the Counseling Psychology Program. Other reasons for dismissal include, but are not limited to, academic dishonesty, violations of provisions of the American Psychological Association's Standards for Ethical Conduct, and certain legal violations.

Program of Study for the Doctor of Philosophy in Counseling Psychology

Coursework

The approved degree program for each doctoral student must include one hundred and eight (108) semester hours. Because of the dynamic nature of Counseling Psychology as a discipline, and the developmental nature of this Counseling Psychology program, the curriculum is necessarily dynamic and subject to change and refinement.

Each student's program of study will be individualized to some degree, based on that student's past training, experiences, coursework, needs, interests, and resources. Notwithstanding this individualization, the following core courses are required to meet minimum Ph.D. requirements in Counseling Psychology:

Psychological Foundations (minimum)	27
Empirical/Research Foundations (minimum)	15
Required Professional Core (minimum)	48
Supervised Practica (minimum)	18
Dissertation Research (minimum)	6
Predoctoral Professional Psychology Internship (minimum)	4
Total Program Hours (minimum)	108

Qualifying Research Project

In lieu of a qualifying examination, all students must complete a defensible research project prior to taking the doctoral level comprehensive examination. Students are expected to exhibit mastery in research design and analysis through completion of a qualifying research project. This project is designed to ensure that doctoral students have mastered minimal standards in their knowledge of research design, methodology, and data analysis.

Students entering the program with a master's degree who have completed a master's level thesis may submit their thesis for approval as their qualifying research project. Students entering the program with a bachelor's degree and those with a master's degree who have not completed an approved master's thesis are required to complete a qualifying research project prior to taking comprehensive exams.

Doctoral Comprehensive Examination

After an appropriate amount of coursework (minimum of two years or equivalent) has been completed, and after consultation with and approval from his or her advisor, the student may take the Doctoral Comprehensive Examination in Counseling Psychology. Successful completion of the Doctoral Comprehensive Examination in Counseling Psychology is required prior to acceptance of internship offers, as well as prior to registration for dissertation hours.

The purpose of this examination is both educative and evaluative. The Doctoral Comprehensive Examination in Counseling Psychology assesses whether minimal competencies in the substantive areas of counseling psychology have been achieved through coursework and training experiences. However the process of becoming a competent counseling psychologist extends well beyond coursework. In this regard, the Doctoral Comprehensive Examination in Counseling Psychology provides an impetus for students to integrate their knowledge base across educational and training experiences, as well as to move beyond minimal competencies and toward a solid professional identity.

Failure to successfully pass this examination after two attempts will result in termination of the student from the program. After satisfactory completion of the Doctoral Comprehensive Examination in Counseling Psychology, the student is granted doctoral candidacy.

Practicum Training

Students may enter the program with either a bachelor or master's degree in psychology or a related field. Thus, considerable variation exists in student' counseling skills and counseling-relevant coursework. During their first year in the program, students enroll in a sequence of classes in which they are given didactic instruction in, and exposure to, counseling theories, techniques, group, and psychopathology. Once students complete this sequence of courses they are eligible to begin practicum training.

Practicum serves to ensure the competence of students in both the science and practice of Counseling Psychology. That is, throughout their practica experiences, students are expected to integrate relevant research findings with their clinical practice. Students are expected to begin practicum during the Summer quarter after their first year in the program. A twelve-month beginning practicum experience, which involves supervised practicum placement at the Psychological Services Clinic (PSC) and practicum courses on campus, is followed by a similar more advanced twelve-month experience either on or off campus. Following these two practica experiences (beginning and advanced), students may elect to continue receiving supervised clinical experiences through independent field placements.

Dissertation

One of the core components of the doctoral program in Counseling Psychology is the successful completion of a dissertation. The dissertation is an integral part of the doctoral program and demonstrates that a student has successfully acquired and mastered the fundamental components of conducting independent empirical research. The dissertation consists of original empirical research conducted under the direction of a Dissertation Chair and Dissertation Committee. A student must enroll in a minimum of 6 total semester credit hours for dissertation, and must enroll in at least one (1) semester credit hour of dissertation every quarter after successful completion of the Doctoral Comprehensive Examination in Counseling Psychology. Following completion of the dissertation, the student is required to publicly defend this scholarly work.

Internship

Counseling psychology doctoral students are required to complete a predoctoral internship (PSYC 624) which must equate to one calendar year of full-time supervised counseling psychology experience (4 to 12 semester hours.). Ideally, internship sites will be APA-approved; however, at minimum the site must be Association of Psychology Postdoctoral and Internship Centers (APPIC) approved and be reviewed and approved by the Counseling Psychology Training Director, the Counseling Psychology Program Core Faculty Committee at least one quarter prior to commencing the internship. Before accepting a predoctoral internship, the student must be in good academic standing as certified by the Counseling Psychology Director of Training and must have received specific permission to accept the internship from the Counseling Psychology Program Core Faculty Committee.

The internship is an essential component of doctoral training programs in Counseling Psychology. Internships should provide the trainee with the opportunity to take substantial responsibility for carrying out major professional functions in the context of appropriate supervision support, professional role modeling, and awareness of administrative structures. Students apply for and obtain an internship after completion of relevant didactic and practicum work, a qualifying research project, Doctoral Comprehensive Examination in Counseling Psychology, and before the granting of a doctoral degree.

The internship experience is crucial preparation for functioning as an independent professional Counseling Psychologist. It should be an intensive and extensive experience related to the graduate program's training ovjectives and should further the development of the knowledge, skills and clinical sensitivities of the trainee.

Transfer Credits

With the approval of the student's advisor, the Core Counseling Psychology Program Faculty Committee, the Department Head, and the College Director of Graduate Studies, a maximum of 18 graduate-level semester credit hours may be transferred in the Ph.D. program in Counseling Psychology. Transfer credit is limited to the following courses: PSYC 602 (physiological Psychology), PSYC 601 (Historical Foundations of Modern Psychology), PSYC 604 (Theories of Social Psychology), PSYC 609 (Personality Theory), PSYC 608 (Life-Span Developmental Psychology), COUN 529 (Cross-Cultural Counseling), COUN 516 (Group Processes/Dynamics), COUN 518 (Techniques of Counseling), PSYC 629 (Rotating Seminar in Counseling Theories) and approved electives. The student will work with his/her advisor, who will then present the student's materials to the Core Counseling Psychology Program Faculty Committee in order to gauge equivalency of transfer coursework. (Students who have prior doctoral coursework, materials for transfer of more than 18 semester credit hours may be handled on a case-by-case basis). If a course from another college or university is approved for transfer credit, the student still has full responsibility for material covered in the comparable Louisiana Tech course that is part of the doctoral program curriculum and assessed by the comprehensive exam. This issue is particularly important with respect to the Doctoral Comprehensive Examination in Counseling Psychology because the comprehensive examination might contain material covered in the Louisiana Tech course that was not covered in the course for which transfer credit was obtained. The student needs to ensure his/her own adequate preparation for the Doctoral Comprehensive Examination in Counseling Psychology

Time Limit for the Ph.D. in Counseling Psychology

The doctoral degree in counseling psychology must be completed within five (5) consecutive calendar years after passing the Doctoral Comprehensive Examination in Counseling Psychology and being admitted to candidacy.

Curriculum.

The curriculum may be obtained from our home page (http://www.latech.edu/tech/education/phd.html), or by e-mail (psychology@latech.edu), or by writing the Department of Psychology and Behavioral Sciences, P.O. Box 10048, Ruston, LA 71272.

Louisiana Education Consortium

Doctor of Education Degree (Ed.D.)

The Doctor of Education degree in Curriculum and Instruction or Educational Leadership is offered through the cooperative efforts of Grambling State University, Louisiana Tech University, and University of Louisiana at Monroe and is coordinated through the Louisiana Education Consortium Governing Board. All consortium institutions offer foundation courses and other graduate courses required in the Ed.D. program in Curriculum and Instruction or Educational Leadership based upon faculty expertise and other institutional resources. The Doctor of Education degree in Curriculum and Instruction and in Educational Leadership is awarded by the institution to which the student has been admitted for doctoral study with course work being completed on all three campuses in order to provide diverse academic experiences. A unique strength of the Louisiana Education Consortium is that the three institutions strategically pool faculty, equipment, and technology.

The programs are designed for K-12 personnel, including teachers and administrators. The primary goal of the doctoral programs is the preparation of practitioner-scholars for roles in elementary, middle, and secondary school settings.

Admission Requirements for the Doctor of Education Degree

Student admission in Regular status to the Doctoral program is based upon the following criteria:

- Applicants must hold a master's degree from a regionally accredited institution in an area related to their proposed program of study.
- Applicants must have a minimum cumulative undergraduate grade point average of at least 2.75 and a minimum cumulative graduate grade point average of at least 3.25.
- Applicants must have completed the Graduate Record Examination (GRE) with a minimum score of 1000 (Verbal and Quantitative) or 1500 (Verbal, Quantitative and Analytical).

- Applicants must have teaching and or administrative experience in a kindergarten, elementary, middle, or secondary school or similar educational setting. A valid teaching certificate or equivalent course work is required for admission.
- Applicants must submit three letters of recommendation from individuals who are familiar with their character, teaching/administrative performance and ability to perform academically on the doctoral level.
- Applicants should complete their admission portfolios by inclusion of a personal resume and samples of their writing, particularly writing that has been published.
- Finalists in the application process may be required to have a personal interview with the doctoral admission committee on the campus from which the student wishes to receive a degree.
- In addition to demonstrating evidence of academic competence and capability, those persons selected each year for this program will be applicants who are already considered leaders in their educative fields and who have clearly articulated their educational commitment to public schools. The application process is competitive.

Any applicant meeting all other requirements for admission except minimum GPA or GRE scores may appeal to the Consortium Governing Board for admission in conditional status. The Board may admit to individual campuses, under these conditions, up to ten percent of the total number of students admitted during any semester/quarter. No student shall be admitted when the student's GRE test performance is in the lowest quartile among students taking the test on the same date.

Eligibility to Remain in the Doctor of Education Degree Program

Students enrolled in the doctoral program must maintain a minimum grade point average of 3.0 during each term of enrollment. Failure of the student to maintain an overall graduate grade point average of 3.0 or receipt of any grade lower than C or receipt of more than six semester hours of C in graduate course work, will result in termination from the program. The student must successfully complete all course work with a minimum grade point average of 3.25.

A graduate student who is denied admission to or further continuance in the Doctor of Education degree program may appeal for admission or readmission. All appeals must be approved by the appropriate committee on the student's campus of enrollment and by the Consortium Governing Board.

Program of Study for the Doctor of Education Degree

Coursework

The approved degree program for each doctoral student must include a minimum of sixty hours beyond the master's degree of which at least one half must be in course work open only to doctoral students. Individuals possessing the Education Specialist Degree in the area in which they are pursuing the doctorate must complete a minimum of 45 additional semester hours of credit for the doctorate.

The consortium program for the Doctor of Education degree consists of the following components:

Education Foundations/Research/Statistics	12
Core Courses for Specific Degree	18
Cognate	9
Elective	3
Internship	6
Dissertation/Research Design Seminar	12
Minimum Total Hours	60 semester hours

Initial campus enrollment may not be changed during the student's matriculation in the doctoral program. Each student pursuing the doctorate through the Louisiana Education Consortium will be required to enroll in classes on the campus of each participating institution. A minimum of fifteen semester hours of the minimum sixty hours required for the doctorate must be taken on the campuses of participating institutions other than the host campus. At least two courses must be taken on each campus.

Preliminary Examination

Upon completion of a minimum of 15 semester hours and not more than 27 semester hours of doctoral course work, each student will be required to take a preliminary examination. The preliminary examination is designed to measure student competence in 1) educational foundations, 2) research, 3) statistics and 4) general professional knowledge. This common six-hour written examination will be constructed by appropriate consortium faculty. Following the evaluation of the written preliminary examination, a one-hour oral examination may be conducted by the student's advisory committee. Student performance on both components of this examination will form the basis for any revisions of the program of study. Failure to pass this examination after two attempts will result in termination of the student from the program.

Comprehensive Examination

The second doctoral examination, the comprehensive examination, is administered when the student has completed all courses in the degree plan or is enrolled in them. This examination consists of a six-hour written component and a two-hour oral examination. Failure to complete this examination satisfactorily will result in a revision of the program of study and an additional examination. Failure to pass this examination after two attempts will result in termination of the student from the program. After satisfactory completion of the comprehensive examination, the student is admitted to candidacy.

Internship

The Louisiana Education Consortium is unique in preparing students to become practitioner-scholars. These individuals will apply the knowledge acquired in program components to practical settings. To achieve this goal, six semester hours of internship will be required. Students are eligible to apply for internship only after successful completion of the comprehensive examination. The internship must be completed at a site other than the student's place of employment. The student's doctoral committee will assist the student in internship placement.

Dissertation

In addition to the research requirements associated with each course, all doctoral students are required to complete a dissertation. The dissertation should be directed toward the degree specialization and must include field-based research. Students are encouraged to pursue the identification of a dissertation topic and the review of the literature prior to the comprehensive examination. The dissertation prospectus must be approved by the student's doctoral committee after the comprehensive examination has been successfully completed. Other research requirements, for example, the use of human subjects, must be approved on the campus on which the student is enrolled.

The student will be expected to enroll for a minimum of three semester hours of dissertation credit for each semester/quarter in which the student is working with faculty on the dissertation. The student must be enrolled in a minimum of three semester hours of dissertation credit during the semester/quarter in which the degree is conferred. No fewer than nine semester hours of credit shall be earned for successful completion of the dissertation.

Following completion of the dissertation, the student will be expected to defend this scholarly work during a dissertation defense.

Doctoral Committee

The student's doctoral committee shall consist of the major professor and a minimum of three additional faculty. The major professor is the committee chair and must be selected from the institution in which the student is enrolled. Each institution shall have at least one representative on each doctoral committee. Each committee will include a professor from the cognate area. Additional committee members may be added to address specific student program or research needs. The student's doctoral committee is selected by the student, appointed by the appropriate administrator on each campus, and approved by the Consortium Board.

Residence Requirements for the Doctor of Education Degree

Students pursuing the Doctor of Education degree will be required to spend at least two consecutive semesters/quarters in residence on the campus from which the degree is to be awarded. Students must be enrolled as full-time students during the time in which the residence requirement is being met.

Transfer of Credit for the Doctor of Education Degree

A maximum of nine semester hours of graduate credit appropriate to the student's degree program may be transferred from other institutions offering regionally accredited graduate programs if earned in residence at that institution. Students are requested to submit catalog descriptions of courses under consideration. No credits for which a grade of less than B has been earned may be transferred. Neither internship nor dissertation credit may be transferred into consortium programs.

Time Limit for the Doctor of Education Degree

All course work, internships, and the dissertation must be completed within a seven-year time period from date of admission to the program. Courses transferred into the doctoral program must also be within the seven-year time limit for completion. Any appeal for extension must be approved by the institution's Graduate Council and the Consortium Governing Board.

Policies and Procedures

Policies and procedures for the Louisiana Education Consortium Ed.D. are detailed in the Louisiana Education Consortium Handbook available in Prescott Library, in the University Bookstore and online at URL http://www.latech.edu/tech/education/gradhandhook/education.html .

Graduate Programs
College of Engineering and Science

Officers of Instruction

Dean
Leslie K. Guice
Associate Dean, Research and Graduate Studies
Director, Institute for Micromanufacturing
Kody Varahramyan
Associate Dean, Undergraduate Studies
James D. Nelson
Associate Dean, External Programs
Paul N. Hale, Jr.
Biomedical Engineering
Stanley A. Napper, Academic Director
Steven Jones, Program Chair
Chemical Engineering,
Bill Elmore, Academic Director
Bill Elmore, Program Chair
Chemistry
Bala Ramachandran, Academic Director
Dale Snow, Program Chair
Civil Engineering
Bill Elmore, Academic Director
Freddy Roberts, Program Chair
Computer Science
Jenna P. Carpenter, Academic Director
Vir Phoha, Program Chair
Electrical Engineering
Jenna P. Carpenter, Academic Director
Dave Cowling, Program Chair
Industrial Engineering
Stanley A. Napper, Academic Director
Jun-Ing Ker, Program Chair
Mathematics and Statistics
E. Eugene Callens, Jr., Academic Director
George Butler, Program Chair
Mechanical Engineering
Stanley A. Napper, Academic Director
Bill Jordan, Program Chair
Physics
Bala Ramachandran, Academic Director
Lee Sawyer, Program Chair

The College of Engineering and Science offers the Master of Science degree with majors (specializations) available in each of the Engineering and Science programs. An interdisciplinary Doctor of Philosophy degree in Engineering is offered with strong research emphasis. A Doctor of Philosophy degree is offered in the Biomedical Engineering program. The College is also the major participant in the Interdisciplinary Doctor of Philosophy degree in Computational Analysis and Modeling (CAM).

Financial Assistance

Financial assistance is available to a limited number of qualified graduate students in the College of Engineering and Science. This assistance includes graduate assistantships awarded from the College or from research contracts sponsored by governmental agencies, private foundations and industry. A few University graduate assistantships are also available. Out-of-state tuition is usually waived for students who are awarded assistantships. A limited number of fellowships are available to students in the doctoral programs; these fellowships may also include a full tuition waiver. Inquiries about financial assistance should be directed to the Associate Dean for Graduate Studies.

For a student on a full-time (20 hours of work per week) assistantship, the minimum required load is 6 semester hours of graduate credit per quarter and the maximum load allowed is 9 credit hours (these hours must be listed on the student's Plan of Study).

Research Activities

The College of Engineering and Science is a member of the Engineering Research Council of the American Society for engineering and science education. Engineering research is an important function of the College in that it addresses technological advances and provides professional development opportunities for the faculty. The purpose of the research division of the College is to encourage, promote, and facilitate the performance of original research by members of the College of Engineering and Science and to expedite the dissemination of the knowledge thus gained. The financial support of research projects is derived from two primary sources: (a) the operating budget of the Division of Engineering and Science Research and (b) sponsorship of a project by an interested outside agency.

The College of Engineering and Science regards original research and scholarly publications as a vital part of engineering and science education. A research thesis is required of all master's students except those approved for non-thesis option, and a dissertation is required of all doctoral students. The student works in concert with his/her advisory committee to plan, execute, and publish this research.

Submission of Research Proposals

Research proposals for students enrolled in a Master of Science degree program are due during the student's second quarter of enrollment in the given degree program. Research proposals for students enrolled in a doctoral degree program are due during the student's fourth quarter of enrollment in the given degree program. Any student who has not met this condition will not be allowed to register as a graduate student until a research proposal has been submitted.

Change of Thesis or Dissertation Advisor

After the Advisory Committee is appointed and a Plan of Study has been filed with the Graduate School, the student may appeal for a change of advisor only under extreme circumstances. A written request for a change of advisor must be submitted to the Associate Dean for Graduate Studies of the College. This must also include a description of the circumstances leading to the request and an explanation of why the student believes this is the only course of action remaining to be explored. The Associate Dean may charge a team of graduate faculty members to investigate the matter and submit a report. The Associate Dean will make a recommendation to the Dean of the College who will make a recommendation to the Dean of Graduate School. The final decision on the matter rests with the Dean of Graduate School. If the appointment of a new advisor is appropriate, a new thesis/dissertation topic may also have to be adopted.

The Master of Science Degree Programs

Master of Science in Engineering (M.S.E.)

Thesis Option. In order to pursue the Master of Science, a student must be admitted as a graduate student in one of the programs of engineering and science. In addition to any required remedial course work not taken for graduate credit, the student will be required to complete a minimum of 30 semester hours for graduate credit, of which a maximum of 6 hours will be earned in research and thesis. A minimum of 15 hours must be earned in courses open only to graduate students.

Non-Thesis Option. The thesis requirement meets the needs of most master's students in the College of Engineering and Science; however, non-thesis options are also available to those students who elect to take additional course work in lieu of writing a thesis, subject to the approval of the student's graduate advisory committee. In these cases, a minimum of 36 semester hours of graduate course work will be required, of which 3 semester hours shall involve a practicum on an advanced topic approved by the student's advisory committee. By University requirements, a minimum of 18 of these hours must be earned in courses open only to graduate students. The student must indicate his/her preference for the non-thesis option during the first quarter of graduate enrollment when his/her Plan of Study is submitted.

General Admissions Consideration. The Dean of the College of Engineering and Science, or a person designated by the Dean, reserves the right to be more restrictive on the admission or other requirements than those stated under the Graduate School section of this Bulletin.

Admission to the Masters Program

For students desiring to major in biomedical, chemical, civil, electrical, industrial or mechanical engineering, a baccalaureate degree with a major in the same engineering discipline from an ABET accredited program is the best preparation. Students who do not possess this background are not discouraged from applying, but, in general, must expect some non-graduate credit background work in order to pursue their graduate program effectively and successfully. Since the master's degree is generally accepted as a higher level of intellectual accomplishment than the baccalaureate degree, the student must expect his/her program to be structured accordingly. The student will be required to remove any deficiencies in mathematics, science, engineering, and communication. In particular, students with a baccalaureate in mathematics or the physical sciences should expect remedial courses stressing engineering analysis, synthesis, and design.

Students entering the master's program in computer science will be expected to have a background equivalent to the bachelor's program in computer science at Louisiana Tech. Any core computer science courses in the B. S. program at Tech will be considered deficiency courses for master's students if they have not taken equivalent courses in their bachelor's programs. A student may challenge a deficiency course by successfully completing a comprehensive examination and, as appropriate, programming projects. Graduate students will be required to maintain a 3.0 grade point average in all deficiency courses; failure to do so will result in transfer to post-baccalaureate status.

In addition to the general University admission requirements, a student must also meet the following requirements for admission to a Master of Science program in the College of Engineering and Science. These are minimum requirements and meeting them does not guarantee admission:

1. All students applying for any graduate program in the College of Engineering and Science are required to submit a GRE score at the time of application.
2. If a student has an overall GPA of 3.00 and either a GRE score of 1070 or higher (Verbal + Quantitative) or a GPA of 3.00 or higher on the last 60 hours of undergraduate course work, he/she may be considered for unconditional admission to the Master of Science program.
3. If a student has an overall GPA between 2.50 and 3.00 or a GPA between 2.50 and 3.00 on the last 60 hours of undergraduate course work, he/she may be considered for conditional admission to the Master of Science program.
4. Conditional and unconditional admission is explained under the Graduate School section of this Bulletin.

Individual Requirements

The exercise of these options and the choice of courses will be proposed as a plan of study by the student and his/her Advisory Committee subject to review and approval (in order) by the major program chair, the Associate Dean for Research and Graduate Studies, the Dean of the College of Engineering and Science, and the Dean of the Graduate School. The transfer of graduate credit from another graduate institution, graduate credit by examination, graduate credit as a graduating senior, or credit earned other than as a regularly enrolled graduate student in the College of Engineering and Science at Louisiana Tech must meet all University standards and is also subject to approval as part of the plan of study. Courses taken for graduate credit while the student is registered in the non-degree unclassified category will not be applied to a degree program without approval by the student's advisory committee and the Associate Dean for Research and Graduate Studies.

Individual programs may, upon approval by the Dean of the College of Engineering and Science, impose additional requirements, such as written comprehensive exams.

Master of Science in Chemistry (M.S.)

Research specialties of the chemistry program are as follows: the mechanisms of organic reactions, theoretical chemistry, synthesis and properties of novel inorganic compounds, environmental problems, separation techniques and trace analysis, conformational analysis by vibrational spectroscopy, enzyme kinetics, single crystal x-ray structure determination, and NMR spectroscopy.

In addition to the Graduate School admission requirements, an applicant must have earned college credit for courses as follows: one year of general chemistry, quantitative analysis, organic chemistry, physical chemistry, and physics; mathematics through calculus, both differential and integral; and inorganic chemistry.

The candidate for the master's degree must complete a total of 30 semester hours of graduate credit in chemistry, or 24 hours of chemistry and 6 hours in a related field, consisting of courses numbered 400 (for graduates and advanced undergraduates) and 500 (for graduate students only).

Nine of the required 30 hours must be earned by taking for credit courses numbered 500 (for graduates only).

In addition to the 9-hour requirement just stated, 6 hours of the total must be earned by taking for credit Chemistry 551, Research and Thesis, and by completing an acceptable thesis. A written examination will be taken in the major field and in other fields if the student's advisory committee requires it.

A graduate committee, appointed for each student, shall review the qualifications of the candidate and set forth the

courses required for the Master of Science degree. This committee may also require deficiency courses to be taken without graduate credit upon the basis of each student's transcript.

Master of Science in Mathematics & Statistics (M.S.)

The mathematics and statistics program offers in depth studies in algebra, analysis, differential equations, probability and statistics, applied mathematics, and computational mathematics.

In addition to the University requirements for admission, the applicant must have a bachelor's degree with the equivalent of an undergraduate major in mathematics of not less than 30 semester hours. By the end of the first quarter of enrollment, the student is to choose one area of interest. An advisory committee that reflects the student's major area of interest will then be appointed.

Each candidate for the M.S. degree will be required to have credit in the following Louisiana Tech University courses or their equivalent at another college or university: Math 405, 414, 480, and Statistics 405.

In addition, each candidate for the M.S. degree must satisfy the conditions in one of the following two plans:

Plan A: Thirty semester hours of graduate credit must be earned. A minimum of 24 semester hours, 6 of which are to be for an acceptable thesis, must be earned in the Mathematics and Statistics Program. At least 9 semester hours, excluding thesis credit, must be in 500-level courses in the Mathematics and Statistics Program. Up to 6 semester hours of graduate courses may be chosen from a related field if approved by the advisory committee.

Plan B: Thirty-six semester hours of graduate credit must be earned. A minimum of 27 semester hours, 3 of which are to be for an acceptable project, must be in the Mathematics and Statistics Program. At least 9 hours, excluding credit for a project, must be in 500-level courses in the Mathematics and Statistics Program. Up to 6 semester hours may be chosen from a related field if approved by the advisory committee. The project will be a study in some area of mathematics or statistics not normally covered in a regularly scheduled course, or it will be a solution to a problem that requires mathematics or statistics at the graduate level. A project must be approved by the student's advisory committee before credit is received.

Master of Science in Physics (M.S.)

The physics program offers instruction and opportunities for research in the areas of solid state physics, high energy physics, computational physics, and quantum gravity. The completion of the master's program will prepare the student for further work toward the doctorate degree as well as for employment in government and industry.

In addition to the admission requirements of the Graduate School, the applicant must have a bachelor's degree with the equivalent of an undergraduate major in physics.

The minimum residence requirement for the master's degree with a major in physics is three quarters.

Each candidate for the M.S. degree must satisfy the conditions in one of the following two plans:

Plan A: The candidate for the master's degree must complete a minimum of 24 semester hours of graduate credit in physics plus Math 502 and Math 544, or other courses acceptable to his/her thesis committee. Six of the required 30 hours must be earned by taking Physics 551, Research and Thesis, and by completing an acceptable master's thesis.

During the first quarter of residence, the student must take a preliminary oral examination over undergraduate physics. In addition, the student must pass an oral examination on his/her thesis.

Plan B: The candidate must earn thirty-six hours in this non-thesis plan as approved by his/her advisory committee. At least 27 hours must be in 500-level courses in the physics program and nine hours in mathematics or other courses acceptable to the student's advisory committee. During the first quarter of residence, the student must take a preliminary oral examination over undergraduate physics. In addition, the student must pass an oral examination over his/her graduate work.

Master of Science in Computer Science(M.S.C.S.)

The computer science program offers in depth study and research in systems, theory, algorithms, and applied aspects of computer science. Completion of the master's degree will prepare a student for employment in government and industry and for doctoral programs in computer science.

Students entering the master's program in computer science will be expected to have a background equivalent to the bachelor's program in computer science at Louisiana Tech. Any core computer science courses in the B. S. program at Tech will be considered deficiency courses for master's students if they have not taken equivalent courses in their bachelor's programs. A student may challenge a deficiency course by successfully completing a comprehensive examination and, as appropriate, programming projects.

In computer science a thesis student must complete 30 semester hours, including three core courses, two two-course sequences, a 500-level elective, and 6 semester hours of thesis. Non-thesis students must complete 36 semester hours, including three core courses, three two-course sequences, two 500-level electives, and 3 semester hours of practicum.

Master of Science in Engineering Management (M.S.E.M.)

The engineering management program is a practice-oriented (non-thesis) masters degree and focuses on managing technology and engineering functions. The program includes 33 semester hours of coursework.

Master of Science in Manufacturing Systems Engineering (M.M.S.E.)

An interdisciplinary degree in Manufacturing Systems Engineering is administered by the College of Engineering and Science. Students can pursue the degree on either a thesis or non-thesis basis. Courses are taken from three primary areas: manufacturing process control, integrated design and manufacturing, and integration of manufacturing operations. Additionally, courses can be taken from three supplemental areas: business, mathematics and statistics, and computer science.

The Doctoral Degree Programs

The Louisiana Tech University College of Engineering & Science offers doctoral programs in four areas. An interdisciplinary Doctor of Philosophy degree in Engineering is offered with a major emphasis on research. A Doctor of Philosophy degree is offered in the Biomedical Engineering program. The College is also the major participant in the Interdisciplinary Doctor of Philosophy degree in Computational Analysis and Modeling (CAM) and is a joint partner in the combined Ph.D. Biomedical Engineering/M.D. Program with Louisiana State University Medical Center – Shreveport.

Admission to the Doctoral Programs

Prior to entering the Doctor of Philosophy program in Engineering a student must have a degree in an acceptable engineering or related curriculum.

For students desiring to major in Biomedical Engineering, a baccalaureate degree with a major in an engineering discipline from an ABET-accredited institution is the best preparation. Students who do not possess this background are not discouraged from applying, but, in general, must expect some amount of undergraduate remedial courses stressing engineering analysis and synthesis to prepare them for pursuit of their graduate program effectively and successfully.

Students entering the Doctor of Philosophy in Engineering program or the Doctor of Philosophy program in Biomedical Engineering will be required to remove any deficiencies in mathematics, science, engineering, and communication.

Applicants are required to submit GRE scores and the names and complete address of three academic and professional references who will be contacted directly by the College of Engineering and Science. A GRE score of 1170 or higher (Verbal + Quantitative) or a graduate GPA of 3.25 or higher, if the applicant has an M. S. degree, is required. A GRE score of 1270 or higher (Verbal + Quantitative) is required if the applicant is entering the program with a B.S. degree only. These are minimum requirements and do not guarantee admission to a doctoral program.

Pending receipt of the GRE scores and letters of reference, the applicant may be considered for admission as a non-degree, unclassified student. The applicant will be granted either an unconditional admission or will be rejected after review of all application materials.

Description of Courses.

The 400-level courses that have been approved for graduate credit are for undergraduate and graduate registration; the 500- and 600-level courses are for graduate student registration only. Credit for Research and Dissertation is listed as Engineering 651 rather than as a program listing.

The Doctor of Philosophy Degree Program in Engineering (Ph.D.)

The Ph.D. in Engineering is an interdisciplinary degree with a strong research emphasis. The program prepares candidates for both academic and industry careers. Interdisciplinary graduate degrees have been advocated in recent reports by the National Academy of Engineering and the National Research Council, among others. This degree focuses on the technical strengths and research focal areas of the Institute for Micromanufacturing and the Trenchless Technology Center. **Students must choose research projects for their dissertation in thematic areas closely aligned with these Centers.**

Students in this program are expected to complete 66 graduate hours (including dissertation) beyond the baccalaureate degree. These hours will be approved as part of a comprehensive plan of study by the student's Ph.D. Advisory Committee. Eighteen credit hours of core courses are required of all students in the program. These courses are intended to provide a strong fundamental set of research capabilities and to help individual students bridge the gap to other disciplines preparatory not only to dissertation work but also to their future career. The remaining courses are chosen in relation to the thematic areas, which currently are microelectronics, micromanufacturing, and materials and construction systems.

An acceptable dissertation will be required of all students in this program. A student must register for a minimum of 18 credit hours in Research & Dissertation (Engr 651). The topic will be selected in accordance with and approved by the student's advisory committee and the Associate Dean for Research & Graduate Studies. The advisory committee will review the dissertation and examine the student on its contents before certifying satisfactory completion.

The schedule of exams consists of a comprehensive examination at or near the completion of formal coursework and a defense of the dissertation. The comprehensive examination consists of written and oral parts organized by the Ph.D. in Engineering Steering Committee. At least 60% of those faculty serving on the Advisory Committee must recommend that the student has satisfactorily passed any of the examinations. None of the examinations may be taken more than three times.

The minimum residence requirement for the doctoral degree is 8 quarters beyond the bachelor's degree. The student is required to spend at least 3 quarters beyond the first year of graduate study in continuous residence. The transfer of course work from a recognized graduate school carries with it the transfer of residence credit, but a minimum of 24 semester hours of graduate credit beyond the first year of graduate study must be earned in residence at Louisiana Tech University. Ph.D. students are required to complete the doctoral program in its entirety within 3 years after successful completion of the comprehensive examination.

The Doctor of Philosophy Degree Program in Computational Analysis and Modeling (Ph.D.)

The College of Engineering and Science is the major participant in the interdisciplinary Ph.D.in the CAM program. See the CAM section in this Bulletin for the full program description.

The Doctor of Philosophy Degree Program in Biomedical Engineering (Ph.D.)

The Doctor of Philosophy program in Biomedical Engineering is designed to

- strengthen the foundation in engineering, mathematics, and biomedical engineering principles by advanced courses in these areas;
- provide depth in a specific area of concentration within biomedical engineering;
- provide the skills and experience necessary to fully utilize the resources available in the field, and;
- prepare graduates to conduct independent study and research.

In order to pursue the degree, a student must be accepted as a major in the Biomedical Engineering program. The program is a balance of intensive and extensive formal course work as a foundation, a sequence of examinations, and the production of a dissertation.

The program consists of a minimum of 48 hours credit in formal course work, exclusive of research and dissertation credit, beyond the baccalaureate. Choice of acceptable graduate level courses, including choice and composition of major and minor areas, will be established by the advisory committee in concert with the doctoral student, subject to approval as part of the plan of study.

The typical program includes a minimum of 48 hours of course work (this may cross departmental lines), Mathematics, Physics, Chemistry and Biology. This coursework will include a core sequence of 12 hours in Biomedical Engineering. Individual interests, needs, and the demands of the engineering profession, both current and anticipated, will guide course selection, with flexibility as the keynote. A minimum of 15 hours must be earned in Engineering 651, Research and Dissertation. No foreign language is required for the Ph.D. in Biomedical Engineering. English is the language of communication and both oral and written skills are important.

The schedule of examinations consists of a comprehensive examination at or near the completion of formal course work and a defense of the dissertation. At least 60% of all those serving on the advisory committee must recommend that the

student has satisfactorily passed any of the examinations. None of the examinations may be taken more than three times.

The Combined M.D./Ph.D. Degree Program Louisiana State University Medical Center-Shreveport and Louisiana Tech University

Purpose

The combined M.D./PhD program is designed to promote the education of physician/scientists by allowing qualified students to progress concurrently through the School of Medicine at Louisiana State University-Shreveport and the Graduate School at Louisiana Tech University in a more efficient and productive manner than could be otherwise accomplished. The program is administrative in nature and does not alter the degree requirements, curricula, courses, or admission requirements at either school.

Application

Students who have not matriculated in either school shall make separate application to the School of Medicine at Louisiana State University-Shreveport and the Graduate School at Louisiana Tech University, and to the M.D./Ph.D. Program through the M.D./Ph.D. Program Supervisory Committee. Students must be accepted by each of the schools and by the M.D./Ph.D. Program Supervisory Committee.

Students already enrolled in the School of Medicine may apply for admission into the program if they have not started Clinical Diagnosis 221-222 by application to the Graduate School at Louisiana Tech University and to the M.D./Ph.D. Program Supervisory Committee. After acceptance into the Graduate School and with the approval of the M.D./Ph.D. Program Supervisory Committee, the student may enroll in the program.

Students will meet the admission and program requirements of each school and will maintain the level of good standing requirement by each school to continue in the program.

Special circumstances and exceptions may be considered by the M.D./Ph.D. Supervisory Committee. Exceptions may be implemented if approved by the M.D./Ph.D. Supervisory Committee and the Deans of the respective schools.

Graduate Programs
College of Liberal Arts

Officers of Instruction

Dean
Edward C. Jacobs
Associate Dean
Dennis E. Minor
School of Architecture
Henry Stout, Director
School of Art
Dean C. Dablow, Director
School of Literature & Language
Carole S. Tabor, Director
Department of History
Stephen Webre, Head
School of the Performing Arts
Kenneth Robbins, Director
Department of Speech
J. Clarice Dans, Head

Admission

GRE scores are one factor used in evaluating applications for graduate studies in the College of Liberal Arts. Only after the GRE scores are received will the applicant receive the final review for admission to the relevant graduate program. As noted in the general admissions requirements for the Graduate School, students applying for graduate programs in the College of Liberal Arts must submit GRE scores at least four weeks prior to registration. In exceptional circumstances, that deadline may be extended but only to the end of the student's first quarter.

Graduate Programs

The College of Liberal Arts offers the degree of Master of Arts in the fields of English, History, Speech with an emphasis in Theatre, and Speech-Language Pathology & Audiology. The degree of Master of Fine Arts is offered in Art and in Interior Design.

Thesis

Academic units in the College of Liberal Arts differ in their thesis requirements. Some units do not require a thesis while other units have both thesis and non-thesis tracks. The thesis may be an academic thesis or combined academic/creative thesis, depending on the academic unit. Students should check with their academic unit about thesis options and guidelines for those theses, in addition to checking with the Graduate School about general thesis guidelines.

Division of Research

Louisiana Tech University is committed to quality in teaching, in research and creative activity, and in public service. The Division of Research in the College of Liberal Arts serves to promote research and creative activity by faculty and students. The main sources of research funds are federal and state agencies, private foundations, and industry.

School of Art & School of Architecture

The Master of Fine Arts degree is offered by the School of Architecture and the School of Art and is designed for those interested in the creative aspects of the arts. The Masters of Fine Arts degree is the recognized terminal degree for the visual artist. Work toward the Master of Fine Arts degree may be undertaken in four areas:

- Studio (2D or 3D) - School of Art
- Graphic Design - School of Art
- Interior Design - School of Architecture
- Photography - School of Art

Though distinct in character and professional goals, these programs complement and enrich one another. The programs are competitive, and interested students are encouraged to visit the campus to discuss their educational/career plans with the faculty.

In addition to meeting the general admission requirements for the Graduate School, an applicant must submit a slide portfolio that demonstrates a sufficient undergraduate art background. A Bachelor of Fine Arts for the School of Art or the Bachelor of Interior Design for the School of Architecture are the best preparation. However, students who do not possess these backgrounds are not discouraged from applying, but in general must expect some undergraduate background work or additional graduate level work in order to pursue their graduate program effectively.

The candidate for the Master of Fine Arts must complete a minimum of 60 graduate credit hours. Additional course work beyond the 60-hour minimum may be required. A graduate committee, appointed for each student, shall review the qualifications of the student and set forth the courses required for the degree. A maximum of 21 credit hours is eligible for transfer from another institution, contingent upon graduate committee review and approval. A candidate's status is subject to review at any time. At the conclusion of graduate study, the candidate is expected to present a one-person exhibition, or similar demonstration of his/her accomplishments, which is accompanied by a written and visual record.

A limited number of graduate assistantships are available. Graduate Assistants receive a stipend for the academic year (three quarters) and a waiver of out-of-state tuition, where applicable. The deadline for assistantship applications is April 1.

Although the University accepts applications until 3 weeks prior to registration, this deadline, for a number of reasons, is not adequate for application to the MFA Program. The deadlines for the MFA program are as follows:

- Fall Quarter Admission: May 1
- Winter Quarter Admission: 8 weeks prior to Winter Quarter Registration
- Spring Quarter Admission: 8 weeks prior to Spring Quarter Registration
- Department Assistantships: April 1
- University Assistantships : February 1

Requests to begin the MFA Program in the Summer Quarter are not allowed, because adequate evaluation and administration of new graduate students are not possible during this time. The University Assistantships listed are awarded by the University's Graduate Directors to applicants based on grade-point average and GRE scores.

The School of Art occupied new facilities in the Spring of 1997. The 40,000 sq. ft. main structure houses a 3,000 sq. ft. gallery, a 100-seat auditorium, and two state-of-the-art computer labs. Other facilities include a 10,000 sq. ft. sculpture, woodshop, printmaking, and ceramic lab. Each graduate student is assigned to one of 48 private studios in another facility. Our

facilities are supplemented by visiting lecturers, film presentation, and workshops.

The School of Art Bachelor and Master of Fine Arts degrees are accredited by the National Association of Schools of Art and Design. The Master of Fine Arts in Interior Design degree is also accredited by the National Association of Schools of Art and Design.

Department of English

The graduate program in English is designed to be thorough, comprehensive, and culturally broad. Graduates of the program typically go on to doctoral programs in English or pursue teaching careers at the high school or junior college level. Those students choosing the technical writing concentration often enter business and government. The Department of English maintains a collaborative electronic-learning agreement with University of Louisiana at Monroe to exchange graduate-level video courses point-to-point. The Department also maintains a cooperative agreement with Louisiana State University at Shreveport to provide graduate-level video courses. Details of these agreements are available from the department office.

The English Department offers a limited number of teaching assistantships awarded on a competitive basis.

Master of Arts with a Major in English (M.A.)

In addition to the Graduate School admission requirements, an applicant must have a bachelor's degree from an accredited college. For unconditional admission, a minimum of 24 hours must be in English. At least 12 of these 24 hours must be junior- or senior- level course work. An applicant who does not meet these additional requirements may be admitted conditionally and required to take additional course work.

Candidates for the degree of Master of Arts with a major in English will follow one of two plans.

- Under **Plan A (Thesis)**, the student must complete a minimum of 33 hours of graduate credit in English, consisting of courses numbered 400 (for graduates and advanced undergraduates) and 500 (for graduate students only). Six of the 33 hours must be earned in Liberal Arts 551, Research and Thesis. In addition to the 6 thesis hours of Liberal Arts 551, the 33 hours must include at least four other 500-level courses exclusively for graduate students, one of which must be English 591. Finally, although a written examination is not given under Plan A, the student must pass a one-hour oral defense based on thesis, course work, and a specialized reading list.
- Under **Plan B (Non-Thesis)**, the student must complete a total of 33 hours of graduate credit and pass a written and oral examination. At least 6 of the required 11 courses must be at the 500 level (for graduate students only), one of which must be English 591. The remaining 5 courses may be taken either at the 500 level (for graduate students only) or at the 400 level (for advanced undergraduates and graduate students).
- Specific details for the examination process for both Plan A and Plan B are available from either the Coordinator of Graduate Studies in English or the English Department Office.

All English courses numbered 400 or above in the current Bulletin, unless otherwise designated, are acceptable for graduate credit toward the degree of Master of Arts with a major in English.

Department of History

The graduate program in history is designed to train postgraduate students in the knowledge and skills necessary to the professional practice of history as preparation for further study (especially the Ph.D. in history), for employment or advancement in fields in which such skills are desirable, and for personal cultural enrichment. Combined with a teacher certification program, the MA in history is excellent preparation for teaching social studies at the secondary level.

The Department of History maintains a collaborative agreement with the University of Louisiana at Monroe (ULM) and a cooperative agreement with Louisiana State University at Shreveport. Details of these agreements are available from the department office.

Graduate assistantships are available to qualified students on a competitive basis. Other forms of competitive assistance include the McGinty Graduate Fellowship, the Louise B. Johnson Graduate Scholarship, and the Morgan D. Peoples Graduate Scholarship.

Master of Arts with a Major in History (M.A.)

In addition to the admissions requirements of the Graduate School, the applicant must have the equivalent of an undergraduate minor, or 21 semester hours, in history.

A student wishing to pursue the Master of Arts in history will elect a major specialty concentration, which will consist of at least 12 semester hours of thematically related course work chosen in consultation with the graduate advisor. **Major Specialty Concentrations** currently offered are:

- Southern History
- History of Culture and Ideas
- History of American Foreign Policy

The major specialty concentrations in Southern history and the history of culture and ideas are offered under the collaborative agreement with the University of Louisiana at Monroe (ULM). Some courses related to these concentrations are taught by ULM faculty members, who are also available to direct independent study experiences and to serve on thesis and examination committees.

Individualized concentrations may be permitted with the approval of the graduate advisor and the graduate coordinating committee.

The degree of Master of Arts in History may be completed under either Plan A (Thesis) or Plan B (Non-Thesis):

- **Plan A (Thesis):** the thesis plan is recommended for the student who anticipates continuing graduate study beyond the Master of Arts degree. It may also be appropriate to the professional or personal goals of other students. The student must complete 30 semester hours of graduate credit, 6 hours of which will be given for successful completion of a thesis. The thesis course is Liberal Arts 551, Thesis Writing and Research (3 semester hours credit), which may be repeated once for credit. At least 12 of the remaining 24 hours must be completed in 500-level courses open only to graduate students. History 505 is required of all students.
- **Plan B (Non-Thesis):** This plan is intended primarily for the student who does not anticipate pursuing doctoral-level work in history following completion of the Master of Arts degree. The student will not prepare a thesis, but must pass a written examination in his or her area of major specialty concentration, or other approved area of course work specialization. Also, the student must submit at least two substantial research papers prepared in 500-level courses for departmental approval as evidence of research and writing skills attained. The student must complete 33 hours of

graduate credit in history, at least 18 of which must be completed in 500-level courses open only to graduate students. History 505 is required of all students.

Every candidate for the Master of Arts degree in History must pass an oral examination covering his or her entire program of study.

All history courses numbered 400 or above in the current Bulletin of Louisiana Tech University, unless otherwise designated, are acceptable for credit toward the degree of Master of Arts with a major in history. Six hours of approved course work may be taken outside the discipline of history.

Department of Speech

Graduate programs in the Department of Speech provide training and experience in Speech Communication, Speech-Language Pathology and Audiology, and Theatre Arts. The student may choose a program of study which allows concentration in any one of these areas. All graduate students in Speech-Language Pathology and Audiology and Speech Communication must demonstrate acceptable proficiency in research and writing. Such proficiency must be demonstrated in Speech 500: Introduction to Research. Speech courses numbered 400 or above in the current Bulletin of Louisiana Tech University may be considered for credit toward the degree of Master of Arts with a major in Speech.

Master of Arts in Speech (M.A.)

General Degree Requirements

Applicants who do not have an undergraduate major in one of the areas of Speech noted above are expected to satisfy any course deficiencies in the initial stages of their graduate program.

The graduate student in Speech must complete 36 semester credit hours. The student will follow one of two plans of study. Under **Plan A**, he/she must complete a minimum of 30 hours of graduate credit in Speech, or 24 hours in Speech, and 6 hours in a related field, which are approved by his/her major professor and by the Head of the Department of Speech. Twelve of the required 30 hours must be in courses offered exclusively for graduate students (500 series), not including thesis courses. In addition, six hours of the total must be earned by taking for credit Liberal Arts 551: Research and Thesis and by completing an acceptable thesis. A written and an oral examination on all course work and the thesis are required.

The requirements under **Plan B** are the same as those under Plan A, except that the student will not write a thesis and will complete a minimum of 36 hours of graduate credit.

Graduate credit, not to exceed six hours, may be earned in courses in fields related to Speech. Such credit must be approved by the student's advisor and the Head of the Department of Speech.

All graduate students in Speech-Language Pathology and Audiology, as well as Speech Communication, must demonstrate acceptable proficiency in research and reporting. Such proficiency must be demonstrated in Speech 500: Introduction to Research. All speech courses numbered 400 or above in the Bulletin catalog of Louisiana Tech are acceptable for credit toward the degree of Master of Arts with a major in speech.

Master of Arts in Speech with a Concentration in Speech Communication

The graduate program in Speech Communication offers students advanced study and scholarly research in applied organizational communication. With a goal of professional communication competency, the program allows the student to focus on the study of information flow within an organization and the impact of communication on individuals entering, working in, and exiting organizations. The combination of communication theory and applied course work is central to the graduate education experience. All graduate students are required to complete practicum course work. Practica in speech communication are viewed as educational tools that provide meaningful professional experience related to the study of communication in organizational settings. Students are encouraged to schedule their practica in organizations and/or areas in which they would one day like to work (e.g., business and industry, higher education). The academic course work and practica are sequenced so that a student can normally fulfill the requirements for the Master of Arts in Speech Communication in two years. Speech communication course work is offered in organizational communication, research methods, communication theory, and special communication topics related to faculty and student interests. Graduates can expect to work in a wide range of professions including human resources development, corporate communication, training and development, public relations, communication consulting, education, and other related fields.

All prospective graduate students must meet the general admissions requirements of the Graduate School and those who do not have an undergraduate major in Speech Communication are expected to satisfy any course deficiencies in the initial stages of their graduate program. Graduate students in the speech communication emphasis will complete one of the two degree plans discussed above in "Master of Arts in Speech: General Requirements."

Master of Arts in Speech with a Concentration in Theatre

The Graduate Theatre Program (administered in the School of the Performing Arts) requires that students take 15 credit hours in a general core including Speech/Theatre 515, 518, 531,532, and 536; 12 hours in an area of theatre concentration; and 6 hours in elective or related field courses, approved by the director of the School of the Performing Arts.

Admission to the program includes formal application to the Louisiana Tech University Graduate School and campus audition/interview. (A video audition or interview off campus can be substituted). Students pursuing the Master of Arts with theatre emphasis will follow either Plan A or Plan B as outlined above in "Master of Arts in Speech: General Degree Requirements."

Master of Arts in Speech-Language Pathology and Audiology (M.A.)

The graduate programs in Speech-Language Pathology and Audiology are accredited by the Council on Academic Accreditation (CAA) of the American Speech-Language-Hearing Association (ASHA). The purpose of accreditation is three-fold:

1. to promote excellence in the preparation of graduates to enter the professions of Speech-Language Pathology and Audiology through the development and implementation of standards of educational quality;
2. to protect and inform the public by recognizing programs that meet or exceed the educational standards; and
3. to encourage graduate programs to monitor and enhance the efficacy of their educational activities by means of continuous self-study and improvement. Accreditation is limited to those graduate educational programs that prepare persons for entry into the professions.

Therefore, in addition to meeting the general admission requirements of the Graduate School, students seeking admission to the graduate program in Speech-Language Pathology and Audiology must be recommended for admission to the graduate program by the graduate admissions committee of the Department of Speech. The committee evaluates each applicant on grade point averages, Graduate Record Examination (GRE) scores, letters of intent, and three letters of recommendation (at least one of which must come from a faculty member who taught the applicant in a communicative disorders course). The departmental graduate admissions committee may ask applicants to schedule personal interviews. Only those students who can demonstrate strong potential for completing all degree requirements are accepted into the program.

The application deadline for admission in any academic year is March 15. The graduate admissions committee will review only those applications that are completed by March 15. The committee's review process is completed by April 15, and applicants are notified accordingly. Students may enter the graduate program only in the Fall Quarter of each academic year.

The minimum number of graduate semester hours required for the Master's degree in Speech-Language Pathology and Audiology is 36. However, students majoring in Speech-Language Pathology and Audiology often have to take 40 or more semester hours in order to complete clinical certification requirements. The student with an undergraduate degree in speech-language-hearing typically requires two years of full-time study (including at least one summer) to complete all requirements for the degree. A student who does not hold an undergraduate degree in speech-language-hearing is expected to satisfy any course deficiencies in the initial stages of the graduate program. This is necessary in order for the student to meet the academic and clinical practicum certification requirements of the ASHA. All courses necessary to satisfy any deficiencies are offered in the Department of Speech. Graduate students in Speech-Language Pathology and Audiology will complete one of the two degree plans discussed above in "Master of Arts in Speech: General Degree Requirements."

The academic course work and clinical practicum experiences are sequenced so that the student meets the academic and clinical training requirements for the ASHA Certificate of Clinical Competence (CCC) in either audiology or speech-language pathology prior to graduation. All students in speech-language pathology and audiology are required to meet the academic and clinical experience requirements set by the ASHA for the Certificate of Clinical Competence in Speech-Language Pathology or Audiology prior to completion of the master's degree. Speech-language pathology course work is offered in adult and child language disorders, neurological disorders, phonology, stuttering, cleft palate, diagnostic procedures, speech science, voice disorders, and research methodology. Audiology course work is offered in hearing disorders; differential, pediatric, and industrial audiology; instrumentation and calibration; central auditory processing disorders; physiological tests of auditory function; hearing aids; aural rehabilitation; and research methodology. In addition to clinical practicum experiences obtained through the Louisiana Tech Speech and Hearing Center, located on campus, graduate students obtain practicum experiences in a variety of off-campus clinical sites. This is necessary in order for students to earn the clinical clock hours required for certification. Students should be aware that it is necessary that they be assigned to affiliated off-campus clinical training sites in order for them to earn the clinical clock hours required for certification. Each student will be responsible for transportation and his/her own expenses when assigned to one of these sites.

COURSE DESCRIPTIONS

Courses are numbered as follows: freshmen - 100 level; sophomores - 200 level; juniors - 300 level; seniors - 400 level; graduate students - 500 & 600 level. Certain 300- and 400-level courses may be taken by graduate students for graduate credit; in such cases, graduate students complete additional research assignments to bring the courses up to graduate level rigor. The letter G in parentheses, **(G)**, appears at the end of those 400-level undergraduate course descriptions which are approved for graduate level work. Only students admitted to the Graduate School may enroll in 500 & 600 level courses.

No credit is allowed in any curriculum for any course with a catalog number beginning with zero (0) (e.g. ENGL 099). These courses are open only to those students who place in them by examination.

The numerical listing after each course title gives the following information: the first number represents lab hours per week; the second digit represents the number of 75-minute lecture periods per week; the third digit is the semester credit hours earned for completion of the course. A few courses will have a fourth digit in parentheses. This means the course may be repeated for credit and the fourth digit designates the total amount of semester hour credit that may be earned through repetition of the course. Typically, these courses are research-, performance-, or project-oriented and found in the 300-, 400-levels (undergraduate student) or 500-, 600-levels (graduate student).

Some courses require the student to complete a prerequisite course or to secure special permission from faculty prior to enrolling in the course. These prerequisites are listed immediately after the numerical semester credit hour designations. Each student is responsible for complying with prerequisite course work requirements and special instructions.

NOTE: Course offerings for each term are listed in the ***Quarterly Schedule of Classes***, published prior to Early Registration each quarter. Offerings by quarter are subject to change to accommodate needs of students.

ACCOUNTING (ACCT)

201: Elementary Accounting. 0-3-3. Basic understanding of concepts and methods of accounting and the significance of accounting information for managerial decision-making.

202: Elementary Accounting. 0-3-3. Preq., ACCT 201. Basic understanding of concepts and methods of accounting and the significance of accounting information for managerial decision-making.

206: Financial Statement Analysis for Entrepreneurial Decision Making. 0-3-3. Not open to accounting majors. This course is designed to provide non-accounting majors with an understanding of financial statement analysis from an entrepreneurial decision making perspective.

303: Intermediate Accounting. 0-3-3. Preq., ACCT 202. The theory and application of accounting procedures to financial reporting.

304: Intermediate Accounting. 0-3-3. Preq., ACCT 303. The theory and application of accounting procedures to financial reporting.

305: Intermediate Accounting. 0-3-3. Preq., ACCT 304. The theory and application of accounting procedures to financial reporting.

307: Income Tax. 0-3-3. Preq., ACCT 201. A study of Federal income tax laws and state income tax laws and their effect on individual income.

308: Managerial Cost Accounting. 0-3-3. Preq., ACCT 202. A study of cost systems; accounting peculiar to manufacturing enterprises; making cost statements; and solving cost problems.

401: Internship in Accounting I. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Accounting II. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

404: Tax Factors in Entrepreneurial Decision Making. 0-3-3. Preq., ACCT 201 or 206. Not open to undergraduate accounting majors or MPA students. This course is designed to provide non-accounting majors with an understanding of major federal income tax, estate, and gift tax issues that confront entrepreneurs. **(G)**

406: Advanced Income Tax. 0-3-3. Preq., ACCT 307. A continuation of ACCT 307 with further study into tax problems of fiduciaries, partnerships, and corporations; solutions of problems.

412: Municipal and Government Accounting. 0-3-3. Preq., ACCT 303. Accounting procedures of the Federal, municipal, and state governments. Attention is given to the preparation of budgets, financial statements, and to budgetary control. **(G)**

413: Auditing. 0-3-3. Preq., ACCT 305 and credit for or registration in ACCT 308. The study of basic auditing concerns, objectives and methodology.

414: Advanced Accounting. 0-3-3. Preq., ACCT 305. Study of business combinations and consolidated financial statements; partnerships; international operations; fiduciary accounting; and governmental and not-for-profit entities. **(G)**

422: Taxation of Corporations and Shareholders. 0-3-3. Preq., ACCT. 307 and senior standing. In-depth study of tax law that pertains to corporations and shareholders; corporate organizations; liquidation; reorganization; and Subchapters. **(G)**

433: Accounting Systems. 0-3-3. A study of accounting systems and systems installations.

451: Advanced Cost Accounting. 0-3-3. Preq., ACCT 308. A study of the advanced phases of cost accounting: standard costs; distribution costs; cost analysis. **(G)**

490: Contemporary Problems in Accounting. 0-3-3. (Pass/Fail). Intensive study of current advanced accounting topics.

491: Advanced Theory of Accounting. 0-3-3. Preq., permission of adviser. Intensive study of current advanced accounting theory. **(G)**

493: Advanced Auditing. 0-3-3. Preq., ACCT 413. Intensive study of professional conduct, auditing standards, auditor's liability, reports, and internal auditing. **(G)**

505: Accounting Analysis for Decision-Making. 0-3-3. Preq., ACCT 201 and 202. A study of accounting data and their uses with the goal of aiding management in the use of such data for decision making.

506: Seminar in Financial Accounting. 0-3-3. Preq., ACCT 305 A brief historical development of accounting thought followed by investigations into controversial and special areas of financial accounting.

507: Contemporary Accounting Theory. 0-3-3. Preq., ACCT 305. An intensive study of recent developments, research and literature in accounting theory promulgated by the various professional accounting associations and related financial organizations.

508: Advanced Managerial Accounting. 0-3-3. Preq., ACCT 308. A study of the role of accounting in supporting the management of organizations.

513: Advanced Auditing. 0-3-3. Preq., ACCT 413. Intensive study of professional conduct, auditing standards, auditor's liability, reports, statistical sampling, and internal auditing.

517: EDP Accounting. 0-3-3. Preq., ACCT 413. A study of the accounting procedures and systems in a computer-intensive environment, including the proper utilization of computers in auditing the firm.

519: International Accounting. 0-3-3. Preq., ACCT 305. A study of the financial and managerial accounting issues and practices related to the globalization of business.

521: Cases and Problems in Income Taxes. 0-3-3. Preq., ACCT 307. Research cases covering various phases of income taxes; study of some source materials and research methods for ascertaining current rulings and trends in laws and regulations.

541: Accounting Analysis. 0-3-3. Preq., ACCT 413. Accounting policy and analysis through integration and application of knowledge gained in accounting and accounting related courses; emphasizes interrelationships of major functions of business and analysis.

550: Directed Study in Accounting. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of accounting.

606: Seminar in Financial Accounting. 0-3-3. Preq., ACCT 305. Requires Doctoral standing. May require additional class meetings. A brief historical development of accounting thought followed by investigations into controversial and special areas of financial accounting. Credit will not be given for ACCT 606 if credit is given for ACCT 506.

607: Contemporary Accounting Theory. 0-3-3. Preq., ACCT 305. Requires Doctoral standing. May require additional class meetings. An intensive study of recent developments, research and literature in accounting theory promulgated by the various professional accounting associations and related financial organizations. Credit will not be given for ACCT 607 if credit is given for ACCT 507.

608: Advanced Managerial Accounting. 0-3-3. Preq., ACCT 308. Requires Doctoral standing. May require additional class meetings. A study of the role of accounting in supporting the management of organizations. Credit will not be given for ACCT 608 if credit is given for ACCT 508.

610: Current Accounting Research. 0-3-3 Preq., Doctoral Standing with MPA or equivalent. Accounting research and design with emphasis on evaluation of results of research.

613: Advanced Auditing. 0-3-3. Preq., ACCT 413. Requires Doctoral standing. May require additional class meetings. Intensive study of professional conduct, auditing standards, auditor's liability, reports, statistical sampling, and internal auditing. Credit will not be given for ACCT 613 if credit is given for ACCT 513.

615: Theory of Accounting. 0-3-3. Preq., Doctoral Standing with MPA or equivalent. A detailed study of the development of accounting with emphasis on what should be as compared to Generally Accepted Accounting Principles.

617: EDP Accounting. 0-3-3. Preq., ACCT 413. Requires Doctoral standing. May require additional class meetings. A study of the accounting procedures and systems in a computer-intensive environment, including the proper utilization of computers in auditing the firm. Credit will not be given for ACCT 617 if credit is given for ACCT 517.

619: International Accounting. 0-3-3. Preq., ACCT 305. Requires Doctoral standing. May require additional class meetings. A study of the financial and managerial accounting issues and practices related to the globalization of business. Credit will not be given for ACCT 619 if credit is given for ACCT 519.

621: Cases and Problems in Income Taxes. 0-3-3. Preq., ACCT 307. Requires Doctoral standing. May require additional class meetings. Research cases covering various phases of income taxes; study of some source materials and research methods for ascertaining current rulings and trends in laws and regulations. Credit will not be given for ACCT 621 if credit is given for ACCT 521.

641: Accounting Analysis. 0-3-3. Preq., ACCT 413. Requires Doctoral standing. May require additional class meetings. Accounting policy and analysis through integration and application of knowledge gained in accounting and accounting related courses; emphasizes interrelationships of major functions of business and analysis. Credit will not be given for ACCT 641 if credit is given for ACCT 541.

650: Directed Study in Accounting. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of accounting.

685: Comprehensive Exam in Accounting. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in accounting. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in accounting. Requires consent of graduate director.

ADMINISTRATION & BUSINESS (AB)

110: Introduction to Business. 0-3-3. Preq., CIS 110. A foundations course that emphasizes decision-making and entrepreneurial activities in an ever-changing world economy.

189: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit

194: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

289: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

294: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

300: Special Problems. 0-3-3. Preq., approval of instructor and department head. Selected contemporary business and economics topics. Topic will determine course admissions criteria.

301: Independent Study. 1-3 hours credit. Preq., approval of instructor and department head. Selected contemporary business and economics topics. Normally taken only by CAB students in their curricular specialty.

389: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

394: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

400: Special Problems. 0-3-3. Preq., Approval of instructor, department head, and dean. Special contemporary business and economic topics. Topic will determine course admissions criteria.

401: Independent Study. 1-3 hours credit. Preq., Approval of instructor, department head, and dean. Selected contemporary business and economic topics in a student's curricular specialty.

444: Critical Thinking for Business. 0-3-3. An overview of the elements of thinking, reasoning, and questioning as applied to business decision-making.

489: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

494: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Administration and Business. May be repeated for credit.

495: Business Administration Capstone. 0-3-3. Preq., all core business courses and senior standing in the College of Administration & Business. Administrative policy determination through integration and application of knowledge gained in previous courses; emphasizes interrelationships of major functions of business under conditions of uncertainty; utilizes case study approach.

551: Research and Thesis. 3 hours credit. Maximum credit allowed is 6 hours.

594: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Administration and Business.

610: Current Topics in Research. 0-3-3. May be repeated. Required of resident DBAs each quarter. Non-degree credit. Pass-Fail. Research methodology, current research of doctoral candidates, faculty, invited lecturers.

685: Oral Comprehensive Exam. No credit. Doctoral standing required. Required for all business administration doctoral students. Successful completion of the oral comprehensive exam is a prerequisite to beginning the doctoral dissertation. Requires consent of graduate director and advisory committee chair.

690: Research and Dissertation. 3 hours credit. Minimum credit allowed is 15 hours.

AGRICULTURAL BUSINESS (AGBU)

220: Principles of Agricultural Economics. 0-3-3. Economic theory with application to production, marketing, and financing in agribusiness. Institutions such as cooperatives, farm credit systems, foreign agricultural trade, and government will be emphasized.

310: Agricultural Policy. 0-3-3. The impact of agricultural policy on the farm firm and agribusiness industry. Emphasis is placed on policy issues affecting producers and consumers of agricultural products.

402: Economics of Farm Management. 0-3-3. Economics principles applied to individual farm organization and management and study of farm accounting systems. **(G)**

411: Seminar. 0-1-1 (3). Reviews, reports, and discussion of current problems in Agriculture and related fields.

430: Principles and Practices of Agricultural Marketing. 0-3-3. Methods and channels of agricultural marketing; marketing principles; governmental action concerned with the marketing process; analysis and evaluation of marketing problems. **(G)**

450: Natural Resource Economics. 0-3-3. Tools for economic decision-making applied to the use and allocation of natural resources associated with agriculture. Costs and benefits of various approaches to natural resource management.

460: Agricultural Finance. 0-3-3. Analysis of financial investments in the agricultural firm, credit sources, debt repayment, capital allocation, and the use of short, intermediate, and long-term credit. **(G)**

AGRICULTURAL EDUCATION (AGED)

450: Advanced Agricultural Shop Methods and Safety. 3-2-3. Preq., AGSC 209 and 211. Methods and techniques for instruction in agricultural shop safety and power tool use in the high school agricultural shop laboratory. **(G)**

460: Fundamentals of Agricultural Education. 0-3-3. History, traditions, and guidelines of agricultural education. Consideration of federal, state, and local laws and regulations concerning agricultural education and Louisiana's public high schools. **(G).**

AGRICULTURAL SCIENCE (AGSC)

201: Microcomputer Applications. 0-3-3. Introduction to microcomputers with specific applications in filing conventions, word processing, spreadsheets, electronic communications, and other topics.

209: Small Engines. 3-0-1. Principles of operation, construction, application, maintenance, and overhaul procedures of small internal combustion engines.

211: General Shop. 6-0-2. Care and use of tools, gas and electric welding, cold metal work, and woodwork.

320: Statistical Methods. 0-3-3. Preq., sophomore standing or above. Introduction to descriptive and inferential statistics, probability, sampling distributions, confidence intervals, hypothesis testing, ANOVA, correlation and regression, with an emphasis on biological data and applications.

321: Electricity Applied to Bio-Systems. 3-2-3. Practical application of electricity to farm and forest operations including electric motors, safety, wiring, lighting, refrigeration, and heating.

477: Practica/Internship/Cooperative Education Work Experience. 1-9 hours credit. (Pass/Fail). On-site supervised, structured work experiences located within a 100-mile radius of Ruston. Application and supervision fee required.

478: Practica/Internship/Cooperative Education Work Experience. 1-9 hours credit. (Pass/Fail). On-site supervised, structured work experiences located within a 101- to 200-mile radius of Ruston. Application and supervision fee required.

479: Practica/Internship/Cooperative Education Work Experience. 1-9 hours credit. (Pass/Fail). On-site supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and supervision fee required.

516: Contemporary Topics. 1-6 hours credit (6). Examination and discussion of a variety of timely topics pertaining to the agricultural sciences. May be repeated with a change in subject matter.

AIR FORCE AEROSPACE STUDIES (AFAS)

125: Introduction to the U. S. Air Force. (GMC). 0-1-1. Discussion of the Air Force today. Includes topics such as professionalism, communications, and the Air Force installation. Must be taken concurrently with AFAS 155.

126: U.S. Air Force Organization (GMC). 0-1-1. Analysis of the organization of the U.S. Air Force with discussion of the various major Air Force commands. Must be taken concurrently with AFAS 156.

127: The U.S. Air Force Doctrine (GMC). 0-1-1. Completes the analysis of Air Force organization. Examines Air Force doctrine and relationships with other U.S. military forces. Must be taken concurrently with AFAS 157.

155: AFROTC Leadership Laboratory. 1-0-0. Orientation and instruction in Air Force dress and grooming standards and application of Air Force discipline, customs and courtesies. Study of the Armed Forces and AFROTC grade structure, insignia, and chain of command. Introduction to military drill. (Pass/Fail)

156: AFROTC Leadership Laboratory. 1-0-0. Continuation in military customs and courtesies and military drill. Familiarization with Air Force services and activities. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

157: AFROTC Leadership Laboratory. 1-0-0. Structure and functions within the cadet corps, wing and base organizations. Additional instruction in military customs, courtesies and drill. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

225: The Development of Air Power I (GMC). 0-1-1. The beginnings of manned flight from balloons and dirigibles, to the Wright Brothers, World War I and the interwar years. Must be taken concurrently with AFAS 255.

226: The Development of Air Power II (GMC). 0-1-1. Continuation of 225. A study of air power during World War II, the Berlin Airlift and Korea. Must be taken concurrently with AFAS 256.

227: The Development of Air Power III (GMC). 0-1-1. Continuation of 226. A study of U.S. air power in the international arena from 1955 to the present. Must be taken concurrently with AFAS 257.

255: AFROTC Leadership Laboratory. 1-0-0. Understanding the Air Force base environment. Application of Air Force standards, discipline, conduct, customs, and courtesies. Advanced drill positions and movements. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

256: AFROTC Leadership Laboratory. 1-0-0. Understanding selected career areas available based on individual qualifications. Advanced drill movements to include review and ceremony procedures. Discussion of privileges and responsibilities associated with an Air Force commission. Physical fitness training. (Pass/Fail)

257: AFROTC Leadership Laboratory. 1-0-0. Advanced drill movements to include orientation in commanding a flight, command voice, and use of guidon. Preparation for summer field training. Application of physical fitness regimen to meet weight and fitness standards and conditioning for field training environment. (Pass/Fail)

331: Communications for the Air Force (POC). 0-2-2. Functions and formats of Air Force communications. Emphasis on written and oral communications used by junior officers. Must be taken concurrently with AFAS 351.

332: Air Force Leadership (POC). 0-2-2. Analysis of leadership styles and the traits of a leader. Group dynamics. Must be taken concurrently with AFAS 352.

333: Military Management (POC). 0-2-2. Study of management principles with emphasis on the view of an Air Force junior officer. Must be taken concurrently with AFAS 353.

351: AFROTC Leadership Laboratory. 1-0-0. Attain leadership and management competence through participation in advanced leadership experiences. General structure and progression patterns common to selected officer career fields. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

352: AFROTC Leadership Laboratory. 1-0-0. Continuation of advanced leadership experiences to attain leadership and management competence. Application of procedures for evaluating cadets. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

353: AFROTC Leadership Laboratory. 1-0-0. Continuation of advanced leadership experiences to attain leadership and management competence. Comprehension of special summer training programs available to cadets. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

431: National Security Policy and Professionalism. (POC). 0-2-2. Examination of the national security policy process and all of the key participants. Military professionalism and officership will also be examined as to their impact on patterns of civil-military relations. Must be taken concurrently with AFAS 451.

432: Defense Strategy, Policy and Military Law (POC). 0-2-2. Examination of the methods of managing conflict to include arms control and the threat of war. The military justice system and professionalism will be covered as topics of special interest. Must be taken concurrently with AFAS 452.

433: Regional Studies and Preparation for Active Duty. (POC). 0-2-2. Examination of sensitive areas of the world and their impact on American National Security and what the new officer may expect on his/her initial assignment. Must be taken concurrently with AFAS 453.

451: AFROTC Leadership Laboratory. 1-0-0. Application of effective leadership and management techniques with individuals and groups. Comprehension of special education programs available to senior cadets. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

452: AFROTC Leadership Laboratory. 1-0-0. Continuation of the application of effective leadership and management techniques with individuals and groups. Comprehension of Communications and Operations Security programs. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

453: AFROTC Leadership Laboratory. 1-0-0. Continuation of effective leadership and management techniques with individuals and groups. Comprehension of active duty service commitments incurred throughout an officer's career. Understanding factors which facilitate a smooth transition from civilian to military life. Application of physical fitness regimen to meet weight and fitness standards. (Pass/Fail)

ANIMAL SCIENCE (ANSC)

111: Introduction to Animal Science. 0-3-3. Introduction to the field of Animal Science with emphasis on breeds, terminology and basic husbandry practices of dairy and beef cattle, horses, swine, sheep and poultry.

113: Introduction to Animal Science Laboratory. 3-0-1. Practical application and study of the different areas of animal science.

201: Introduction to Poultry Science. 3-2-3. The principles and practices of breeding, incubation, nutrition, disease control, management practices and marketing of poultry.

202: Introduction to Dairy Science. 3-2-3. Preq., ANSC 111. Principles and practices of breeding, feeding and managing dairy cattle for maximum productivity with an introduction to processing and manufacturing.

204: Meat Animal and Carcass Evaluation. 3-2-3. Selection of carcasses and wholesale cuts of beef, pork, and lamb; factors influencing grades, yields, and values in cattle, hogs, and sheep.

211: Introduction to Equine Science. 0-3-3. A general survey of principles of horse management and husbandry, to include anatomy, unsoundness, nutrition, health and reproduction.

220: Introductory Horsemanship. 3-1-2. Introduction to methods and techniques for controlling and influencing the performance of horses.

301: Principles of Animal Nutrition. 0-3-3. Preq., ANSC 111 and CHEM 100 or 130. The source, chemical composition, and nutritive value of farm animal feedstuffs.

302: Testing Dairy Products. 3-2-3. Preq., BISC 214. A chemical and bacterial test of milk and milk products.

304: Dairy Manufacturing-Fluid Milk Products. 3-2-3. The sanitary production, transportation, processing, distribution, and public health inspection of milk and related products.

305: Dairy Manufacturing-Frozen Dessert Production. 3-2-3. The manufacture of ice cream and frozen dairy products.

306: Dairy Manufacturing-Cultured Dairy Products. 6-1-3. Manufacture of butter, various types of cheese, and other cultured products. Defects, packaging, and merchandising of butter and cheese.

307: Endocrinology and Milk Secretion. 0-3-3. Development, structure and functional processes of the endocrine and mammary systems.

309: Anatomy and Physiology of Animals. 3-2-3. Preq., BISC 130. The structures and functions of the tissues and organs of animals.

315: Meats. 6-1-3. Methods and practices involved in the processing and preservation of meats.

318: Physiology of Reproduction. 0-2-2. Preq., ANSC 111. Physiology of reproduction of domestic farm animals. Embryology and anatomy of reproductive systems; gametogenesis, fertilization, gestation and parturition.

322: Horse Behavior/Training I. 5-1-3. Horse behavior and application of principles of psychology to halter breaking, lead training and grooming weanlings/yearlings; preparation of horse for competition.

324: Yearling Foal Management. 8-1-2. Preq., ANSC 111 or 211. Techniques of halter breaking, lead training and grooming weanling/yearling foal using pressure-release behavior modification techniques.

330: Intermediate Horsemanship. 3-1-2. Preq., ANSC 220 or equivalent experience. Intermediate methods and techniques for controlling and influencing the performance of horses.

340: Horse Evaluation. 3-1-2. Preq., ANSC 111 or 211. Detailed evaluation of the horse. Influence of conformation and performance. Use of oral and written defense of judgements.

401: Animal Breeding. 0-2-2. Principles and application of animal breeding, including gene frequencies, heritabilities, inbreeding coefficients, selection and mating systems. **(G)**

405: Applied Animal Nutrition. 3-2-3. Preq., ANSC 301. A review of applied nutritional practices and management, and ration formulation for beef and dairy cattle, horses, swine and poultry. **(G)**

407: Dairy Production. 3-3-4. Preq., ANSC 202. Principles and practices in breeding, feeding and management of dairy cattle.

408: Swine Production. 3-2-3. Principles and practices of breeding, feeding, marketing and management of swine. **(G)**

409: Animal Pathology. 3-2-3. Preq., BISC 214 or 260 and ANSC 307 or 309. The etiology, symptoms, prevention, control and eradication of the major diseases of farm animals. **(G)**

410: Beef Production. 3-3-4. Preq., ANSC 301 or 405. Breeding, feeding, marketing and management of beef cattle. **(G)**

411: Horse Production. 3-3-4. Preq., ANSC 111 or 211, and 318. Principle and practices in breeding, feeding, and management of horses. **(G)**

418: Assisted Reproduction Techniques. 3-2-3. Preq., ANSC 318. Application of assistive reproductive techniques in animals. Includes semen evaluation, processing, and preservation, artificial insemination, embryo transfer, pregnancy diagnosis, and other management techniques. **(G)**

420: Horse Behavior/Training II. 5-1-3. Preq., ANSC 322 or equivalent experience. Horse behavior and application of principles of psychology to ground driving, breaking and training 2- and 3-year old horses; preparation of horses for competition.

425: Special Problems in Animal Science. 1-4 hours credit (8). Preq., Written consent of instructor. Foal management and sale preparation; steer fitting and showing; or topic selected with consent of adviser.

430: Dairy Plant Management. 6-1-3. Preq., ANSC 302, 304, 305. The management problems of dairy processing and manufacturing plants.

440: Equine and Livestock Operations. 0-3-3. Preq., ANSC 111 or 211. Study of unique aspects of procuring and operating different categories of horse units and relationships of such units to other livestock and farm enterprises. **(G)**

450: Advanced Animal Breeding. 0-3-3. Preq., ANSC 401 or consent of instructor. Advanced Quantitative Genetics principles applied to horses and livestock. Emphasis on theory and application of variance, selection, inbreeding and crossbreeding, scale, threshold and correlated characters. **(G)**

460: Advanced Horsemanship. 3-1-2. Preq. ANSC 330 or equivalent experience. Advanced methods and techniques for controlling and influencing the performance of horses.

470: Veterinary Techniques. 4-2-3. Preq., ANSC 309, 409, or special permission. Applications of veterinary diagnostic, therapeutic, and prophylactic techniques used in control of animal diseases. **(G)**

APPLIED & NATURAL SCIENCES (ANS)

189: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

194: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

289: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

294: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

389: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

394: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

489: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

494: Special Topics: 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

589: Special Topics: 1-4 hours credit. Preq., Graduate standing. Selected topics in an identified area of study in the College of Applied & Natural Sciences.

594: Special Topics: 1-4 hours credit. Preq., Graduate standing. Selected topics in an identified area of study in the College of Applied and Natural Sciences.

APPLIED COMPUTATIONAL ANALYSIS & MODELING (ACAM)

610: Current Topics in Research. 0-3-3. May be repeated. Required for ACAM doctoral students each quarter. Non-degree credit. Research Methodology, current research of doctoral candidates, faculty, invited lecturers.

620: Special Topics in Computational Science and Engineering. 1-3 hours credit. May be repeated for 1-3 hours credit each time.

690: Dissertation Research. 0-3-3. Doctoral students only. Registration in any quarter may be for three semester hours credit or multiples thereof, up to a maximum of nine semester hours credit per quarter. Maximum total credit allowed is thirty hours.

ARCHAEOLOGY (ARCH)

401: Introduction to Archaeology. 4-2-3. An introduction to the techniques of research and field work in Archaeology. **(G)**

410: Selected Topics in Archaeology. 0-3-3. Seminar in archaeology with topic designated by instructor. May be repeated for credit as topic changes.**(G)**

420: Indians of the Southwest. 4-2-3. A survey of Indian Archaeology in the southwestern United States. **(G)**

462: Christian Archaeology. 3-2-3. Preq., HIST 101 or consent of instructor or junior standing. A study of the archaeology, architecture, and inscription in early Christian sites in and nearby Rome. **(G)**

463: Etruscan Archaeology. 3-2-3. Preq., HIST 101 or consent of the instructor or junior standing. A study of the art, architecture, archaeology, history and inscriptions of the Etruscans. **(G)**

464: Roman Archaeology. 3-2-3. Preq., HIST 101 (or equivalent). A study of the monuments and antiquities of Classical Rome. **(G)**

466: Egyptian Archaeology. 3-2-3. Preq., HIST 101. The study of the archaeology, art, architecture, history, and inscriptions of the ancient Egyptians. **(G)**

ARCHITECTURE (ARCH)

110: Foundation Design I. 6-0-2. Empirical studies of the principles and processes related to the poetic and tectonic aspects of making architectural form.

112: Communication Skills. 6-0-2. An introduction to the principles and techniques of visualization and representational drawing with an emphasis on the development of freehand skills.

120: Foundation Design II. 6-0-2. Preq., ARCH 110 . Continuation of ARCH 110. Empirical studies of the principles and processes related to the poetic and tectonic aspects of making architectural form.

130: Foundation Design III. 6-0-2. Preq., ARCH 120. Culmination of a three-course sequence studying the principles and processes related to the poetic and tectonic aspects of making architectural form.

131: Architectural Theory. 0-2-2. An examination of architecture as a language system, involving the investigation of its basic vocabulary and grammar and their development and refinement in the history of architecture.

132: Advanced Communication Skills. 6-0-2. Advanced techniques for presentational and representational communication are explored through studio problems requiring sophisticated graphic or non-verbal communication techniques.

200: Issue Investigation. 0-1-1. A synoptic examination of the principles of site analysis and planning as related to building.

210: Foundation Design IV. 6-0-2. Preq., ARCH 130, 131, and 132. Exploratory studies of strategies for combining and composing the fundamental elements of architecture.

211: Architectural History. 0-2-2. An examination of the classical language of architecture with specific reference to the contributions of the social, cultural, intellectual, technological contexts to its development.

220: Foundation Design V. 6-0-2. Preq., ARCH 210. A continuation of ARCH 210 emphasizing the influences of contextual, functional, and ideological constraints on the combination and composition of the fundamental elements of architecture.

221: Building Systems I. 0-3-3. Introduction to the concepts, principles, and conventions associated with a building's structural and envelope systems.

222: Architectural History. 0-2-2. Preq., ARCH 211. An examination of the modern language of architecture with specific reference to the social, cultural, intellectual, and technological contexts to its developments.

230: Foundation Design VI. 6-0-2. Preq., ARCH 220. A culmination of a three- course sequence exploring strategies and constraints related to combining and composing the fundamental elements of architecture.

231: Contemporary Architectural History. 0-2-2. Preq., ARCH 222. An examination of the various movements that have emerged since 1960 with reference to the social, cultural, intellectual, and technological contexts that fostered their developments.

232: Building Systems II. 0-3-3. Study of environmental and physical systems' impact on building envelope and interior space design emphasizing passive energy techniques, daylight, electrical lighting and acoustics.

300: Introduction to Building, Accessibility, and Life Safety Codes. 0-1-1. A synoptic examination of model building codes, Americans with Disabilities Act, and Life Safety Code as they influence the internal logic of buildings.

301: Computer Applications Colloquium. 6-0-2. Introduction to software applications that facilitate research, communication, drafting, and modeling in the discipline of architecture.

310: Architectural Design I. 9-0-3. Preq., ARCH 230. Examination of theoretical issues and historical antecedents through diagrammatic studies and analysis of organizational strategies with an emphasis on masonry construction and its supporting technologies.

311: Built Form and Behavior. 0-2-2. A critical analysis of the psychological, social and cultural factors that are manifest in and influenced by architectural form.

320: Architectural Design II. 9-0-3. Preq., ARCH 310. Examination of the relationship between architecture and its physical context with emphasis on site analysis, design methodology, light frame construction, and passive/sustainable systems.

321: Architectural History Seminar. 0-2-2 (6). Examination and investigation of selected topics associated with architectural history and theory.

331: Theories of Architecture. 0-2-2. Preq., ARCH 231. A study and evaluation of the architectural profession, its intentions, and its cultural relevance.

332: Building Systems III. 0-3-3. A study of service systems' impact on building envelope and interior spaces emphasizing plumbing, mechanical, electrical, and vertical transportation systems.

350: Visual Studies. 9-0-3-(6). Studies of the art and craft of building through the design and fabrication of architectonic objects.

380: Applied Studio Practices. 6-0-2 (4). Practical problems in graphic and visual communications.

400: Studio Problems. 6-0-2 (4). Specialized studio problems in aqueous media on paper.

402: Field Travel. 0-1-1 (3). The examination and analysis of contemporary architectural works and urban environments through participation in supervised travel.

403: Project Documentation. 9-0-3 (6). Preq., ARCH 301. The full documentation of a project of historic or architectural significance in Historic American Buildings Survey format.

407: Computerized Construction Documentation. 0-2-2. Preq., ARCH 474. Development of architecture details, systems, and techniques in the preparation of contract documents.

410: Architectural Design III. 9-0-3. Preq., ARCH 320. Examination of site selection and program definition within varying contexts through schematic design studies emphasizing steel or concrete structural systems and active mechanical/electrical systems.

411: Planning and Urban Design Theory. 0-2-2. An examination of the process of design and change in urban environments, with discussion of strategies and processes for intervening in the development of these environments.

417: Internship in Architecture. 20-0-4 (8). Preq., Senior Standing. Supervised experience in the office of a registered architect, interior designer, engineer or landscape architect. A minimum of 20 hours per week. (Pass/Fail).

420: Architectural Design IV. 9-0-3. Preq., ARCH 410. Examination of the relationship between architecture and the public realm through detailed design and development emphasizing the integration of structural material and building system technologies.

421: Building Systems IV. 0-3-3. Study of the principles of structural behavior and varied building material assemblies through technical documentation.

431: Architectural Seminar I. 0-2-2 (6). Examination and investigation of selected topics associated with the internal logic of buildings: codes, building systems, construction materials, and assemblies.

436: Written Contract Documents. 0-2-2. Preq., Senior standing. Construction specification writing principles using the CSI format and procedures.

445: Professional Problems. A(4 1/2-0-1); B(9 1/2-0-2); C(13 3/4-0-3). Individual study with variable credit of selected professional problems having educational significance. Topic and credit by agreement with the Department Head.

450: Related Readings. A(4 1/2-0-1); B(9 1/2-0-2); C(13 3/4-0-3). Guided readings in a specific aspect of architectural theory or practice under the supervision of a faculty member. Credit and topic by agreement with the Department Head.

471: Professional Practice I. 0-2-2. Architect's role and responsibility in the project process of predesign, design, construction documents, and the administration of the construction contract.

472: Architectural Seminar II. 0-2-2 (6). Examination and investigation of selected topics associated with the practice of architecture: ethics, management, marketing, services, and finances.

473: Design Research. 0-2-2. A study of research method for the architect including the execution of scholarly research and programming as related to the degree design project.

474: Computers for Designers. 6-0-2. Development of fundamental skills in software applications associated with architectural production and project delivery.

480: Degree Design Project I. 12-0-4. Preq., ARCH 473. Initiation of the degree design project through multiple schematic design iterations that reconcile and resolve contextual, formal, functional, and ideological issues.

481: Professional Practice II. 0-2-2. Preq., ARCH 471. The business of architecture with a emphasis on practice trends of the future in respect to project and design management.

482: Architectural Programming. 0-2-2. Advanced techniques of research, analysis and programming through which the effect of pre-design issues and constraints are examined.

490: Degree Design Project II. 12-0-4. Preq., ARCH 480. A continuation of ARCH 480 emphasizing the detailed design development of the previously resolved schematic design.

491: Professional Practice III. 0-2-2. Preq., ARCH 481. The legal, ethical and moral issues of architectural practice as related to the changing professional context.

556: Problems. 12-2-6. Preq., fifth year classification in Architecture. Special projects in architecture and landscape. Department Head must approve projects.

559: Specialized Individual Studio Problems. 6-1-3-(9). Permission and project approval must be obtained from Department Head.

ART (ART)

115: Design. 6-1-3. Formal problems of the theory and practice in the elements and principles of design.

116: Color Design. 6-1-3. Preq., ART 115 or ARCH 110. The study of color and the interaction of color in design.

117: Conceptual Design. 6-1-3. Preq., ART 116. A materials and techniques course with the emphasis on experimental investigations which combines both traditional and contemporary approaches.

118: 3-D Design. 6-1-3. Preq., ART 115. Problems in three-dimensional design and increased emphasis on the development of individual ideas through various materials such as clay, plaster, fiberglass, wood, and plastics.

119. Introduction to Graphic Design Software. 6-1-3. Preq., ART 115 and 116. Survey of the fundamentals of using graphics-creating software. Students will gain a working knowledge of the applications of specific software programs through design assignments.

125: Drawing. 6-1-3. A study of the principles underlying all creative and representation drawing.

126: Drawing. 6-1-3. Preq., ART 125. A continuation of ART 125.

160: Introduction to Graphic Design. 6-1-3. Preq., ART 116 and 126. An Introduction to the methods, processes, and principles of graphic design.

170: Introduction to Photography. 6-1-3. An introduction to the photographic medium through an exploration of basic tools, techniques, and aesthetics of 35mm black and white photography.

173: Intermediate Photographic Practices. 6-1-3. Preq., ART 170. Advanced black and white techniques covering exposure, development, and printing of small format negatives, with special emphasis on the use of the Zone System.

202: Woodshop Orientation. 3-0-1. A familiarization course for students, preparatory to their use of the woodshop. The course will be a hands-on introduction to all the equipment available for student use.

220: Painting. 6-1-3. Preq., ART 116 and 126. Creative approach to the problems in painting with emphasis on observation and representation.

221: Painting. 6-1-3. Preq., ART 220 and 225. Creative approach to the problems in painting with emphasis on the human figure.

225: Drawing. 6-1-3. Preq., ART 125 and 126. The study of human anatomy as related to problems of art.

228-229: Figure Drawing. 6-1-3 each. Preq., ART 125 and 126. Drawing in media from models.

240: Ceramics. 6-1-3. Introductory course on methods of ceramic construction with emphasis on the creative aspects of pottery.

241: Ceramics. 6-1-3. Emphasis on the use of the potter's wheel.

260: Intermediate Graphic Design. 6-1-3. Preq., ART 160. Studio projects emphasizing problem-solving and introducing use of computers in layout/imaging. Includes a pass/fail portfolio requirement for entry into the major. A specific laptop computer is required for this course.

261: Production. 6-1-3. Preq., ART 160. Introduction to the techniques and technology involved in preparing graphic design projects for printing.

262: Layout. 6-1-3. Preq., ART 260. Studio projects exploring contemporary graphic design formats and techniques. Utilization of the creative process in problem solving is emphasized.

263: Illustration. 6-1-3. Preq., ART 260. Exploration of the media and techniques of contemporary illustration. Emphasis also on creative problem solving.

266: History of Art I. 0-3-3. A survey of the painting, sculpture, architecture, and minor arts of ancient and medieval societies.

267: History of Art II. 0-3-3. A survey of the painting, sculpture, architecture, and minor arts from the Renaissance to the present.

270: Concepts of Photographic Imagery. 6-1-3. Preq., ART 173. An introduction to the many facets of contemporary photography from documentary to conceptual. An overview of approaches to problem solving with the camera.

271: Alternative Photographic Processes. 6-1-3. Preq., ART 173. Alternative processes associated with the photographic medium. Creative approach to various techniques involving ortho films, toning, liquid emulsions, pinhole cameras, and hand-coloring applications.

290: Art Appreciation. 0-3-3. Study and enjoyment of art in its various expressions. Principles for critical judgment. Art in dress, the home, furniture, textiles, pottery, painting, graphic arts, and civic art. (non-art majors only)

301: Appreciation and Application of Elementary Art Structure. 0-3-3. Preq., consent of instructor. Theory and practice using the principles of design as basis for appreciation of the visual arts.

320: Painting. 6-1-3. Preq., ART 221. Creative approach to the problems in painting with emphasis on experimentation in various media, subjects, and techniques.

321: Painting. 6-1-3. Continuation of ART 320.

331: Introduction to Printmaking. 6-1-3. Preq., ART 116 and 126. A basic survey of printing techniques in linoleum cut, wood cut, collograph, dry point, etching and lithography.

346: Ceramics. 6-1-3. Preq., ART 240 and 241. An Advanced course in ceramic design and construction with the introduction to the construction and use of ceramic kilns.

347: Ceramics. 6-1-3. Preq., ART 346. A continuation of ART 346.

360: Typography. 6-1-3. Preq., ART 262. Emphasis on problems in typography with special uses of the computer.

361: Art Direction. 6-1-3. Preq., ART 261, 262, and 263. Advanced studio projects emphasizing problem-solving within a creative team and utilizing multiple design and imaging media and techniques.

362: Computer Graphics. 6-1-3 (9). Preq., ART 260. Exploration of the uses of contemporary computer software and hardware for the creation of graphic design projects.

363: Ad Campaign. 6-1-3. Preq., ART 261, 262. Advanced studio projects exploring advertising graphic design and utilizing contemporary advertising media formats.

370: Color Photography. 6-1-3. Preq., ART 173. An introduction to printing film negatives and transparencies onto color photographic papers.

372: Studio Photography. 6-1-3. Preq., ART 173. Problems in controlled lighting for portraiture, figure, fashion, product, and introduction to view camera operation.

373: Commercial Photography. 6-1-3. Preq., ART 372. An introduction to commercial applications of photography. Large format camera operation is studied with assignments covering a wide range of topics from Architecture to Fashion.

374: Commercial Portfolio. 6-1-3. Preq., ART 373. A concentrated study in one area of interest and production of a portfolio suitable for presentation. Large format color will be used extensively.

390: Sculpture. 6-1-3-(9). Preq., ART 118. Investigations in sculptural processes, materials, and techniques.

391: Sculpture. 6-1-3-(9). Preq., ART 118. Creative approach to problems in metal casting, fabrication, welding, mold technology, and foundry procedures.

415: Studio Problems. 6-1-3 (9). Preq., Permission of instructor. Advanced problems in design. **(G)**

420: Studio Problems. 6-1-3-(9). Preq., ART 320. Advanced problems in painting. **(G)**

427: Advanced Drawing. 6-1-3-(9). Preq., ART 228. Interpretive approach to drawing. **(G)**

430: Studio Problems. 6-1-3-(9). Preq., ART 331. Advanced problems in printmaking. **(G)**

440: Studio Problems. 6-1-3 (9). Preq., ART 347. An elective course in advanced crafts. **(G)**

459: Women and the Arts. 0-3-3. Survey of women's involvement with the visual arts. Major emphasis upon anonymous "female" crafts and leading women artists, 1600 to present. **(G)**

460: Monuments of Non-Western Art. 0-3-3. Survey of monuments of architecture, sculpture, painting, etc. from the most glorious epochs of selected Asian, African, Pre-Columbian, and Oceanic cultures. **(G)**

461: American Art, 1929-1990. 0-3-3. Survey of major monuments, artists, styles, and changes in modern American art. **(G)**

462: History of Graphic Design. 0-3-3. Preq., ART 260. Survey of the history of Graphic Design and its influence on today's practice of the profession. (G)

463: Portfolio I. 6-1-3. Preq., ART 260. Advanced projects for the professional graphic design portfolio. (G)

464: Computer Graphics for Portfolio. 6-1-3 (6). Preq., ART 362. Advanced uses of contemporary computer hardware and software for the creation of the graphic design portfolio. (G)

465: American Art in the Age of Expansion, 1865-1893. 0-3-3. A survey of leading artists, styles, movements and changing attitudes about art. It stresses socioeconomic aspects of art making and patronage. (G)

466: History of Modern Art. 0-3-3. Historical and critical appraisal of art in the 19th and 20th centuries. (G)

467: History of the Arts. 0-3-3. A survey of the arts: furniture; weaving and textiles; tools and weapons; ornament, both domestic and personal; artifacts of daily life such as painting, sculpture, etc.

468: History of American Art. 0-3-3. Historical and critical appraisal of art in America from the colonial era to the present. (G)

469: History of Italian Art. 0-3-3. A survey and analysis of the painting, sculpture, and architecture produced in Italy between 1260 and 1600. (G)

471: Studio Problems in Graphic Design. 6-1-3 (9). Preq., ART 260. Advanced projects in graphic design for the professional portfolio, emphasizing concentration in techniques and problem-solving projects. (G)

472: History and Aesthetics of Photography. 0-3-3. A survey of the photographic image from 1839 to the present, with special emphasis on the development of photographic seeing. (G)

473: Image Manipulation with Computers for Artists. 6-1-3-(9). Preq., ART 115, 116, and 125. The use of software and computers in digital imagery using photographic resources. Criticism of individual projects and group discussions. (G)

474: Senior Exhibition. 6-1-3 (9). Senior Standing. One quarter prior to graduation the student must present an exhibition of sufficient quality to warrant exiting the program.

475: Senior Portfolio. 6-1-3. Preq., ART 463 and 464, taken only in the quarter of graduation. Preparation of the professional graphic design portfolio and resume. Course culminates in graded exhibition. Samples of portfolio work for departmental archives are required.

490: Sculpture. 6-1-3-(9). Preq., ART 390 or 391. Creative approach to the problems in sculpture with individually directed experiments in the various sculptural processes. (G)

499: Issues in the Arts. 0-3-3. A seminar for undergraduate senior and graduate students in the arts. This course will cover verbal and written interchange of ideas and issues in the arts. Seniors and graduate students only. (G)

510: Graduate Design. 6-1-3-(6). Studio work varying with the student's project, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

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512: Graduate Design. 6-1-3-(6). Studio work varying with the student's project, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

513: Master's Project. 6-1-3-(6). Original, independent studio work approved by the Art Graduate Committee as appropriate for presentation as a one-man exhibition of final project, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

514: Master's Project. 6-1-3-(6). Original, independent studio work approved by the Art Graduate Committee as appropriate for presentation as a one-man exhibition of final project, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

515: Master's Project. 6-1-3-(6). Original, independent studio work approved by the Art Graduate Committee as appropriate for presentation as a one-man exhibition of final project, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

520: Advanced Studio Problems. 6-1-3-(6). Projects, plus inclusion of the collective graduate seminar in Fall and Winter Quarters

521: Advanced Studio Problems. 6-1-3-(6). Projects, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

522: Advanced Studio Problems. 6-1-3-(6). Projects, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

540: Advanced Crafts. 6-1-3-(6). Studio work involving the design and construction of two-dimensional and three-dimensional problems. Choice of media with consent of Art Graduate Committee, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

541: Advanced Crafts. 6-1-3-(6). Studio work involving the design and construction of two-dimensional and three-dimensional problems. Choice of media with consent of Art Graduate Committee, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

542: Advanced Crafts. 6-1-3-(6). Studio work involving the design and construction of two-dimensional and three-dimensional problems. Choice of media with consent of Art Graduate Committee, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

550: Photographic Projects. 6-1-3-(9). Advanced photographic project in field of special interest, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

564: Graduate Seminar. 6-1-3. Guided study, discussion, and reading in art related to college level teaching.

565: Art History. 6-1-3-(6). Guided and/or independent research related to the History of Art.

566: Art History. 6-1-3-(6). Guided and/or independent research related to contemporary developments in art.

567: Graduate Exhibition. 6-1-3-(6). Preparation for and installation of graduate exhibition, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

570: Photographic Projects. 6-1-3-(9). Advanced photographic concepts and techniques. Practical and expressive application of photographic processes to the applied and fine arts, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

571: Photographic Seminar. 6-1-3. Research paper with supportive audio slide presentation.

572: Portfolio. 6-1-3-(9). Preparation of a portfolio, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

573: Photographic Exhibition. 6-1-3. Preparation of an exhibit, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

574: Directed Projects in Graphic Design & Digital Imaging. 6-1-3 (9). Design project assigned by the Art Graduate Committee. Emphasis on development of practical experience in designer-client relationships and the use of advanced digital design technology to create and disseminate project work, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

575: Directed Projects in Graphic Design & Digital Imaging. 6-1-3 (9). Design project assigned by the Art Graduate Committee. Emphasis on development of practical experience in designer-client relationships and the use of advanced digital design technology to create and disseminate project work, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

576: Directed Projects in Graphic Design & Digital Imaging. 6-1-3 (9). Design project assigned by the Art Graduate Committee. Emphasis on development of practical experience in designer-client relationships and the use of advanced digital design technology to create and disseminate project work, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

577: Directed Research in Graphic Design & Digital Imaging. 6-1-3 (9). Research project developed by student with the Art Graduate Committee. Emphasis on advanced application of abilities pertinent to contemporary graphic design such as use of digital design technology, expertise in traditional media imaging, and the creation of visual communications for corporations, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

578: Directed Research in Graphic Design & Digital Imaging. 6-1-3 (9). Research project developed by student with the Art Graduate Committee. Emphasis on advanced application of abilities pertinent to contemporary graphic design such as use of digital design technology, expertise in traditional media imaging, and the creation of visual communications for corporations, plus inclusion of the collective graduate seminar in Fall and Winter Quarters.

579: Graduate Seminar in Graphic Design Education. 0-3-3 (6). Discussion and guided research concerning college classroom and computer laboratory instruction in graphic design education.

580: Master's Thesis & Exhibition in Graphic Design. 0-3-3. Preparation of a thesis paper for submission to the Art Graduate Committee and a public exhibition of thesis visual works in graphic design.

BIOLOGICAL SCIENCES (BISC)

101: Fundamentals of Biology I. 0-3-3. Introduction to biological concepts of cell structure and physiology, genetics, evolution, and ecology.

102: Fundamentals of Biology II. 0-3-3. Preq., BISC 101. Continuation of biological topics including origin of life, survey of the five kingdoms, plant and animal structure.

130: Biological Principles. 0-3-3. Coreq., BISC 131. Designed for students majoring in science. Introduction to biomolecules, cells, metabolism, genetics, evolution, and ecology.

131: Biological Principles Laboratory. 3-0-1. Coreq., BISC 130. Student-oriented experiments and demonstrations emphasizing biomolecules, cells, metabolism, genetics, evolution, and ecology.

132: Biological Diversity. 0-3-3. Preq., BISC 130; Coreq., BISC 133. An introduction to the classification, anatomy, and physiology of prokaryotes and eukaryotes.

133: Biological Diversity Laboratory. 3-0-1. Coreq., BISC 132. Investigations of the classification, anatomy, and physiology of prokaryotes and eukaryotes.

134: Botany. 0-3-3. Introduction to botany, including the biology of plants, fungi, bacteria, and viruses.

150: Phlebotomy. 0-2-2. Principles of specimen collection, techniques, and processing with emphasis on related issues of patient relations, medical terminology, anatomy and physiology, quality assurance, safety and compliance.

151. Phlebotomy Laboratory. 10-0-2. Preq. or Coreq., BISC 150. A laboratory to accompany BISC 150. Instruction and practicum concerning specimen collection techniques of both routine and special considerations.

200: Principles of Genetics. 0-3-3. Fundamental laws of heredity as applied to plants, animals, and humans.

201: Scientific Principles. 0-3-3. A general course embracing the principles of the biological and physical sciences, incorporating teacher demonstration and laboratory activities.

205: Plant Anatomy. 3-2-3. Preq., BISC 132, 133. A comparative study and interpretation of the internal structure of vascular plants.

212: Conservation and Management of Natural Resources. 0-3-3. An introduction to the wildlife resources of North America and their interrelations with other natural resources.

214: Survey of Microbiology. 4-3-4. Fundamental concepts of microbiology, emphasizing techniques and laboratory procedures used in medically related studies.

216: Plant Biology. 0-3-3. Preq., BISC 130, 131. Introduction to the biology of plants including growth, morphology, physiology, genetics, diversity, and propagation.

217: Plant Biology Laboratory. 3-0-1. Preq. or Coreq., BISC 216. Exploration and application of plant biology concepts and processes.

221: Taxonomy and Morphology of Vascular Plants I. 3-2-3. Preq., BISC 132, 133. Survey of plant morphology, classification, identification, and field techniques. Includes a survey of common families in the SE USA.

222: Taxonomy and Morphology of Vascular Plants II. 3-2-3. Preq., BISC 221. Survey of taxonomy to include a local project. Additional common vascular plant families and identification of plants in winter condition will also be included.

224: Human Anatomy and Physiology. 0-3-3. Preq., Consult with your advisor. The structure and functions of the organ systems of the human body, including anatomy of the vocal and hearing mechanisms.

225: Human Anatomy and Physiology. 0-3-3. Preq., Consult with your advisor. Introduction to human anatomy and physiology including structure and function of cells, tissues, organs and the integumentary, skeletal, muscular, and nervous systems.

226: Anatomy and Physiology Laboratory. 3-0-1. Preq., BISC 225, or concurrent enrollment. Specially designed exercises permitting students to observe the physiology and anatomy of mammals.

227: Human Anatomy and Physiology. 0-3-3. Preq., BISC 225 or equivalent. A continuation of 225. Including structure and function of circulatory, respiratory, digestive, excretory, endocrine and reproductive systems.

228: Anatomy and Physiology Laboratory. 3-0-1. Preq., BISC 227, or concurrent enrollment. Additional laboratory exercises to illustrate the anatomy and physiology of animals.

242: Histological Sectioning. 8 1/2-0-2. Preq., 8 semester credits of BISC. Methods of preparing tissues for microscopic examination.

245: Clinical Analysis. 4 1/4-3-4. Preq., CHEM 104. Study of the laboratory methods used to evaluate the physiochemical state of the body, including a computer assisted approach to laboratory mathematics and quality assurance.

250: Introduction to Clinical Laboratory Sciences. 4-1-2. Introduction to the curriculum and profession including computer utilization in problem solving, professional awareness, pre-clinical/clinical articulations, and information sources in medical technologies.

260: Microbiology. 4-3-4. Preq., CHEM 100, 101; BISC 130, 131. Designed for students majoring in science. Course will cover topics in clinical, applied, environmental, and eukaryotic microbiology.

262: Bacterial Identification Methods and Applications. 0-3-3. Preq., BISC 260. Course covers principles of physical, biochemical, and molecular methods in identifying bacteria.

275: Aquatic Bioassays. 0-1-1. Internet-based course centering on governmental regulations concerning bioassays to test for toxicity in waste effluents released into natural waters in the United States. Also listed as ENSC 275.

284: Introduction to Marine Science. 8-3-4. Preq., BISC 132, 133. Introduction to chemical, geological, and biological processes in the oceans and coastal environments; interrelationships of humans and the marine environment. Five weeks spent at the Louisiana Universities Marine Consortium Coastal Laboratory.

285: Introduction to Marine Zoology. 8-3-4. Preq., BISC 132, 133. Survey of marine animals, particularly those of the Louisiana Gulf Coast, including classification, morphology, physiology, and ecology. Five weeks at the Louisiana Marine Consortium Coastal Laboratory.

290: Comparative Anatomy of Vertebrates. 8 1/2-2-4. Preq., BISC 132, 133. Comparative anatomy and evolution of the vertebrates.

310: Genetics: 4 1/4-2-3. Preq., BISC 132, 133. Principles of inheritance in plants and animals at the biochemical, cellular, organismal, and population levels.

313: Ecology. 4 1/4-2-3. Preq., BISC 132, 133. An overview of the interactions of plants, animals, and non-living factors as they influence individuals, populations, communities, and ecosystems.

315: Cell Biology. 0-3-3. Preq., BISC 132, 133. Detailed study of the structural and functional organization of the cell and the interactions of the organelles with respect to metabolism and heredity.

317: Wildlife Management Principles. 4 1/4-2-3. Preq., BISC 132, 133, and computer literacy. A review of the techniques used in the identification, study, and management of wildlife and their habitat.

320: Animal Physiology. 0-3-3. Preq., BISC 132, 133. (BISC 290 strongly recommended). A general and comparative approach to the principles and concepts of physiology which apply to animal systems.

321: Animal Physiology Laboratory. 4-0-1. Laboratory studies in animal physiology.

330: Plant Pathology. 3-2-3. Preq., BISC 132, 133. A study of plant diseases and disorders.

335: Microbial Physiology. 3-3-4. Preq., BISC 260 and CHEM 250. Basic biochemical and physiological activities of microorganisms.

341: Hematology. 4 1/2-2-3. 8 semester credits of BISC. Quantitative and qualitative methods for determining the condition of cellular blood and a study of its histology, morphology and physiology.

346: Medical X-Ray Technology. 3-1-2. Preq., BISC 130. Methods of obtaining routine radiographs, stressing proper positions and darkroom techniques.

360: Biological Problems. 1 - 3 hour(s) credit (6). Preq., Junior standing and written permission of instructor. An introduction to the principles of research.

361: Laboratory Assisting. 1-3 hour(s) credit (3). Preq., Junior standing and written permission of instructor. Experience in biological science laboratory assisting in student instruction and practice.

401: Parasitology. 3-2-3. Preq., BISC 132, 133. Protozoan and helminthic parasites of medical and veterinary importance to humans with emphasis on morphology, life cycles, pathogenesis, diagnosis, and control.

402: Immunology. 0-3-3. Preq., BISC 260. A study of antigens and antibodies including the chemical basis of antigen-antibody specificity, mechanisms of hypersensitivity, immunological modulators, and immunological diseases.

404: Immunology Laboratory. 3-0-1. Preq. or Coreq., BISC 402. Laboratory exercises in immunology to include precipitation, agglutination procedures, isotopic and nonisotopic immunoassays, reagent preparation and validation.

405: Plant Physiology. 3-2-3. Preq., BISC 132, 133, CHEM 102 or 121. Study of life processes and functions of plants. **(G)**

406: Pathogenic Bacteriology. 3-3-4. Preq., BISC 260. Bacteria pathogenic to humans; principles of infection and immunity in humans and other animals.

407: Histology. 8 1/2-1-3. Preq., BISC 320, 321, or equivalent. Microscopic study of animal tissues with emphasis on functional and structural interrelationships. **(G)**

408: Bacterial Genetics. 3-2-3. Preq., BISC 260, 310. Topics include nucleic acid effectors in prokaryotes, mutations, phage genetics, and molecular methods of studying gene structure/function.

409: Virology. 3-2-3. Preq., CHEM 250. Viruses and their relationship to disease in plants, animals, and bacteria. **(G)**

410: Advanced Genetics. 4 1/4-2-3. Preq., BISC 310 or consent of the instructor. Principles and methods for analyzing biochemical and chromosomal polymorphisms, metabolic pathways, pedigrees, and population differentiation with emphasis on humans. **(G)**

411: Developmental Biology. 6-2-3. Preq., BISC 132, 133. A study of gametogenesis, fertilization, and the embryological development of organisms using descriptive and experimental approaches. **(G)**

412: Environmental Plant Physiology. 0-3-3. Preq., BISC 132 or equivalent. Study of the plant's response to the biotic and abiotic environment. Topics include the plant environment, phytoremediation, and the physiology of plant stress. **(G)**

413: Advanced Ecology. 0-3-3. Preq., BISC 313. An in-depth study of the interactions of the plant and animal communities with their environments. **(G)**

414: Entomology. 3-2-3. Preq., BISC 101, or 102, or 130. Study of insect structure, classification, life cycles, and control practices, with emphasis on economic pests. **(G)**

420: Environmental Animal Physiology. 0-3-3. Preq., 12 hours of BISC including 320. Functional adaptations of animals to their environments, with emphasis on vertebrates. **(G)**

421: Mycology. 4 1/4-2-3. Preq., BISC 132, 133. A survey of the Kingdom Fungi with emphasis on Ascomycete and Basidiomycete anatomy, morphology, and field identification. **(G)**

422: Molecular Biology. 0-3-3. Preq., BISC 132, 133. Emphasis on eukaryotic DNA, RNA structures, mechanisms of replication, transcription, translation, regulation, and control of gene expression.

424: Medical Mycology. 0-2-2. Preq., BISC 132, 133. A study of yeast, molds, and other fungi pathogenic to humans and animals. **(G)**

426: Evolution. 0-3-3. Preq., BISC 130, 131, or equivalent. A study of the concepts, problems, and methods involved in the formulation of modern evolutionary theory.

428: Wetland Ecology. 0-3-3. Study of wetland characteristics and the ecological processes occurring within wetlands. Wetland delineation, restoration, construction and regulation will also be covered. Also listed as FOR 428.

429: Ichthyology. 4 1/4-2-3. Preq., BISC 132, 133. Systematics, anatomy, and ecology of fish with emphasis on local freshwater species. **(G)**

430: Herpetology. 4 1/4-2-3. Preq., BISC 132, 133. The taxonomy, distribution, life histories, and ecology of the herpetiles, with special emphasis on those species found in Louisiana. **(G)**

432: Mammalogy. 4 1/4-2-3. Preq., BISC 132, 133. The identification, taxonomy, characteristics, and general biology of mammals with emphasis upon those of North America. **(G)**

433: Ornithology. 4 1/4-2-3. Preq., BISC 132, 133. Identification, taxonomy, characteristics, and general biology of birds, with emphasis upon those of North America. **(G)**

434: Limnology. 4 1/4-2-3. Preq., BISC 132, 133. The study of the chemical, physical, and biotic aspects of freshwater environments. **(G)**

435: Pond Management. 4 ¼-2-3. Preq., BISC 132, 133, 434. A detailed study of biotic adaptations and biotic and chemical controls in pond ecosystems with emphasis on aquatic vertebrates. **(G)**

436: Field Botany Problems. 30-0-3. Preq., Junior standing and permission of instructor. A field trip experience for study of aquatic and terrestrial plant communities. Offered on demand. **(G)**

437: Field Zoology Problems. 30-0-3. Preq., Junior standing and permission of instructor. A field trip experience for studying the natural history of animal species. Offered on demand. **(G)**

438: Marine Microbiology. 8-3-4. Preq., BISC 130, 131, 132, 133. Introduction to the marine and estuarine microbes, especially bacteria and fungi; covers classification, methodology, role in marine ecosystems, biogeochemical cycles and diseases of marine animals. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory.

439: Marine Science for Teachers. 2-8-3. Survey of the marine sciences, techniques for teaching marine science at secondary and elementary school levels. Five weeks at the Louisiana Universities Marine Consortium Coastal Laboratory.

441: Wildlife Management Internship. 3 hours credit, 40 hours per week. Work experience in the use of the equipment, materials, and procedures in wildlife management.

442: Wildlife Management Internship. 3 hours credit, 40 hours per week. Work experience in the use of the equipment, materials, and procedures in wildlife management.

443: Wildlife Management Internship. 3 hours credit, 40 hours per week. Work experience in the use of the equipment, materials, and procedures in wildlife management.

444: Environmental Microbiology. 4-2-3. Preq., BISC 260. Basic and contemporary aspects of soil, water, and industrial microbiology.

445: Immunohematology. 3-1-2. Preq. BISC 402 or consent of instructor. Principles of donor screening, immunological testing for compatibility, tests for infectious agents and record keeping associated with transfusion medicine.

446: Instrumentation. 3-2-3. Preq. 12 SCH of biological or chemical sciences. Emphasizes the operational theory, use, and maintenance of instruments appropriate to biological investigation through didactic and laboratory exercises.

447: Principles of Pharmacology. 0-3-3. Preq. 8 credit hours of biological and/or chemical sciences. The classification, modes of action, and therapeutic utility of common pharmacological agents are described.

449: Biological and Clinical Applications of Radioisotopes. 3-1-2. Preq., CHEM 104. Intensive training in the use of specialized equipment for measuring ionizing radiations used in biological systems.

450: Biological Topics. 1-4 hour(s) credit (8). An opportunity to observe and discuss topics of current interest in the biological and/or medical sciences. Offered on demand.

455: Wildlife Diseases. 0-3-3. Preq., BISC 132, 133. Study of viral, bacterial, fungal, and metazoan causative agents of disease of wildlife. **(G)**

458: Environmental Law. 0-3-3. Preq., BISC 130, 131, or approval instructor. A review and analysis of state and federal laws, conventions, and international treaties that influence natural resource management. **(G)**

459: Food and Dairy Microbiology. 3-3-4. Preq., BISC 260. Microorganisms of importance in the food and dairy industry including methods for rapid detection of food borne pathogens.

460: Analytical Thinking. 0-3-3. Development of skills for science problem-solving, critical thinking, and communication. **(G)**

465: Forensic Anthropology. 0-3-3. Introduction to forensic anthropology, including intensive study of human skeletal anatomy and variation, archaeological and taphonomic methods and techniques, and crime scene investigation.

466: Medical Anthropology. 0-3-3. Introduction to medical anthropology, including non-western perspectives on disease causation and curing, paleopathology, ethnomedicine, ethnopsychiatry, shamanism, alternative medicine and biocultural approaches to health problems.

467: Biological Anthropology. 0-3-3. Introduction to physical anthropology, including primate anatomy and behavior, human origins and evolution, human adaptation and variation, applied anthropology, and the interrelationship between biology and culture.

470: Medical Ethics. 0-3-3. Reading and discussions of the application of various principles of ethics to questions of medical practice. **(G)**

475: Scientific Inquiry. 0-2-2. Focus will be on the pursuit of scientific knowledge, emphasizing materials and methods employed. A chronological approach will correlate historical settings with the persons who experienced triumph and tragedy in their endeavors.

477: Practica/Internship/Cooperative Education in Biological Sciences. 1-3 hours credit. May be repeated once. (Pass/Fail). On site, supervised, structured work experiences located within a 100 mile radius of Ruston. Application and supervision fee required.

478: Practica/Internship/Cooperative Education in Biological Sciences. 1-3 hours credit. May be repeated once. (Pass/Fail). On site, supervised, structured work experiences located within a 101-200 mile radius of Ruston. Application and supervision fee required.

479: Practica/Internship/Cooperative Education in Biological Sciences. 1-3 hours credit. May be repeated once. (Pass/Fail). On site, supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and supervision fee required.

480: Undergraduate Seminar. 0-1-1. Preq., Senior standing. Required of all senior BISC majors. Supervised study, reports, and discussion of current biological literature.

483: Marine Botany. 8-3-4. Preq., BISC 132, 133. Study of marine and coastal algae and vascular plants including classification, morphology, life cycles, and ecology. Five weeks at the Louisiana Universities Marine Consortium Coastal Laboratory.

484: Marine Vertebrate Zoology. 8-3-4. Preq., BISC 132, 133, plus 8 additional hours of biology. General study of the marine chordates with particular emphasis on fishes, including classification, structure, function, and ecology. Five weeks at the Louisiana Universities Marine Consortium Coastal Laboratory.

485: Marine Ecology. 8-3-4. Preq., BISC 132, 133; CHEM 102, 104. Relationships of marine estuarine organisms to environmental factors; interactions among organisms, communities and ecosystems of the Louisiana coastal zone. Five weeks at the Louisiana Universities Marine Consortium Coastal Laboratory.

486: Marine Invertebrate Zoology. 8-3-4. Preq., BISC 132, 133. General study of the classification, structures, function, and ecology of marine and estuarine invertebrates, emphasizing those of the Louisiana Gulf Coast. Five weeks at the Louisiana Universities Marine Consortium Coastal Laboratory.

501: Graduate Parasitology. 3-2-3. Biology, physiology, morphology, and ecology of the major parasites of humans and domestic animals.

502: Research Methods in Biological Sciences. 0-3-3. Preq., graduate status. An introduction for graduate students to basic methods used in research in the biological sciences.

504: Advanced Microbial Physiology. 3-3-4. Preq., BISC 335. An advanced course on the physiology of bacteria, including bacterial growth and variation, cytology, nutrition, respiration, and temperature effects.

505: Advanced Plant Physiology. 3-2-3. Preq., BISC 405. Principles that underlie interpretation of the physical and metabolic processes of plants. Offered on demand.

509: Biological Sciences Seminar. 0-1-1 (2). Survey of literature on current topics in either Bacteriology, Botany, Microbiology, or Zoology, where appropriate.

512: Advanced Immunology. 6-1-3. Preq., consent of the instructor. An advanced study of the activities of antigens and antibodies.

513: Ecological Topics. 0-3-3 (6). Preq., BISC 313, or 413. An advanced study of selected ecological topics. Offered on demand.

516: Contemporary Topics. 1-4 hour(s) credit. An opportunity to examine and discuss a variety of timely topics pertaining to the biological sciences. May be repeated with a change in subject matter.

517: Applied Biological Sciences Research. 6-1-3. Preq., BISC 502. Laboratory or field studies for non-thesis Master of Science students in the biological sciences. Provides graduate training in applied research skills.

522: Graduate Molecular Biology. 0-3-3. Emphasis on protein structure and function, DNA and RNA, replication, transcription, translation, and control of gene expression. Molecular techniques including transformation, plasmids, PCR, and blotting.

524: Advanced Plant Taxonomy. 3-2-3. Preq., BISC 222. Problems of nomenclature and recent concepts of plant classification. Offered on demand.

526: Graduate Histology. 8 ½-1-3. Microscopic study of animal tissues with an emphasis on structural and functional relationships.

528: Advanced Wetland Ecology. 0-3-3. Study of wetland characteristics and the ecological processes occurring within wetlands. Wetland delineation, restoration, construction, and regulation will also be covered. Cross-listed as FOR 528.

530: Biological Sciences Special Problems. 1-6 hours. Preq., written permission of instructor and Advisory Committee Chairperson. No more than 6 hours credit combined with BISC 540 and 541.

535: Current Topics in Biological Sciences. 0-1-1 (4). Preq., graduate status. An interactive discussion of current issues and problems in the biological sciences. May be repeated for credit with change of course content.

540: Biological Sciences Internship. 40-0-3. Preq., Graduate standing, consent of Advisory Committee Chairperson and Instructor. Career-oriented job experiences. No more than 6 hours credit combined with BISC 530, 540, or 541.

541: Biological Sciences Internship. 40-0-3. Preq., Graduate standing, consent of Advisory Committee Chairperson and Instructor. Career-oriented job experiences. No more than 6 hours credit combined with BISC 530, 540, or 541.

545: History of Zoology. 0-3-3. The historical development of the science of zoology, the persons who contributed to this development, and the nature of the times which produced them. Offered on demand.

551: Research and Thesis. Registration in any quarter may be for 3 semester hours credit or multiples thereof. Maximum credit allowed is six hours.

565: Graduate Forensic Anthropology. 0-3-3. Introduction to forensic anthropology, including intensive study of human skeletal anatomy and variation, archaeological and taphonomic methods and techniques, and crime scene investigation.

566: Graduate Medical Anthropology. 0-3-3. Anthropology of medicine emphasizing non-western perspectives of disease causation and curing, ethnic psychoses, ethnobotany, human disease history, alternative medicine and biocultural approaches to health issues.

567: Graduate Biological Anthropology. 0-3-3. Biological anthropology emphasizing primate anatomy, behavior and systematics, the human fossil record, evolution of human behavior, human adaptation, and the relationship of biology to culture.

570: Graduate Medical Ethics. 0-3-3. Intensive discussions, presentations, and readings concerning the theories of ethics and their applications to the practices of the health professions.

BIOMEDICAL ENGINEERING (BIEN)

100: Introduction to Biomedical Engineering. 3-0-1. Development of the field of Biomedical Engineering, including job opportunities, the Biomedical Engineering Curriculum, professionalism and ethics, dimensions and units, Biomedical Engineering analysis and design.

202: BME Principles I. 0-1-1. Coreq., CHEM 102, BISC 225; Preq., MATH 240. Basic qualitative and quantitative principles of biomedical engineering are presented. The general field of biomedical engineering is reviewed with introduction of conservation and modeling concepts.

203: BME Principles II. 0-1-1. Coreq., BISC 227; Preq., BIEN 202. An introduction to the role of engineering in analyzing physiological systems and in designing devices and instrumentation to study and treat biomedical problems.

204: BME Principles III. 0-1-1. Preq., BIEN 203. A continued introduction to the role of engineering in analyzing physiological systems and in designing devices and instrumentation to study and treat biomedical problems.

225: Biomedical Systems. 0-3-3. Preq., ENGR 221 and credit or registration in MATH 243. Analysis techniques for frequency and time domain signals that occur in linear and non-linear physiological systems. Lumped modeling of physiological phenomena.

230: Biomaterials. 0-2-2. Preq., BIEN 203. Compatibility of materials for use in biomedical applications.

301: Biomedical Fluid Mechanics and Biomedical Energy Transport. 0-3-3. Preq., BIEN 202, MATH 245, PHYS 202, BISC 321, and ENGR 222. The principles of fluid mechanics and thermal energy exchange (momentum and energy balances) in biomedical systems. Analysis of engineering and physiological systems and incorporation of these principles into design of such systems.

303: Biomedical Systems & Controls. 0-3-3. Preq., BIEN 204, ELEN 223, MATH 244, PHYS 202. Frequency domain transformation and analyses, control mechanisms, physiological control systems.

310: Introduction to Clinical Engineering. 3-2-3. Preq., BIEN 202. A foundation course in medical and clinical terminology, medical instrumentation, medical sciences, hospital procedure and medical practice from an engineering perspective.

320: Bioenergetics. 0-3-3. Preq., MATH 242, PHYS 201, BIEN 204. The student is introduced to the concept of bioenergetics-the thermodynamics of living systems. The laws of thermodynamics are emphasized and applied to biological systems.

325: Bioinstrumentation. 3-2-3. Preq., BIEN 225, PHYS 202, BISC 227, Coreq. or credit for MATH 243. Analysis and design of biomedical instrumentation. Basic circuitry, electronics and laboratory techniques including transducers, biopotentials, amplifiers, measurement and safety.

400: Biomedical Engineering Seminar. 3-0-1. Preq., Senior standing. Instruction and practice in conference-type discussions of technical and professional matters of interest to biomedical engineers.

401: Biomedical Mass Transport. 0-3-3. Preq., BIEN 301. The principles of mass balances and transport phenomena in biomedical systems. Analysis of engineering and physiological systems and incorporation of these principles into the design of such systems.

402: Biomedical Engineering Design I. 0-2-2. Preq., BIEN 325, 400, 401, 420; ENGL 303. Individualized design projects requiring integration and

synthesis of prior engineering, life science, design and analytical skills. Utilization of the engineering design process and consideration of biomaterials, biomechanics, human factors, ethical and legal concerns, and oral and written communication skills.

403: Analysis and Design of Physiological Control Systems. 0-3-3. Preq., BIEN 325, 401, ELEN 321. Methods for analyzing and designing linear feedback systems. Physiological control mechanisms presented qualitatively and quantitatively. Design of systems involving physiological systems.

404: Biomedical Engineering Design II. 0-2-2. Preq., BIEN 402. A continuation of BIEN 402.

410: Clinical Engineering Internship. 20-20-6. Preq., BIEN 310 or equivalent and consent. A practical exposure to the health care delivery system. Application of engineering principles to problems unique to that system.

420: Biomaterials and Biomechanics. 0-3-3. Preq., BIEN 301, ENGR 220. Properties of living tissue. Biocompatibility. polymers, metals, and ceramics as biomaterials. Implants for hard and soft tissue. Fundamentals of biomechanics.

425: Advanced Biomedical Instrumentation Systems. 3-2-3. Preq., BIEN 325, or consent. Further analysis and design of biomedical instrumentation. Practical aspects of ideal and real operational amplifiers, and an introduction to microprocessor interfacing.

430: Biomechanics. 0-3-3. Preq., BIEN 230, 301. Mechanical properties and reactions of biological tissues and organs. Analysis of stress, strain and strain rate for biological and bio-artificial components.

435: Senior Biomedical Engineering Laboratory. 3-0-1. Preq., BIEN 401, 403, and 430. Laboratory experiments that demonstrate concepts and techniques in biofluid mechanics, biomechanics, biological mass transport and tissue engineering.

440: Computer Applications for Biomedical Engineers. 0-3-3. Preq., BIEN 202, ENGR 102. The course is designed specifically to training the student in the use of the digital computer for the solution of problems related to Biomedical Engineering. **(G)**

450: Special Topics. 1-4 semester hours credit. May be repeated for credit. Preq., senior standing and consent of instructor. Problems covering selected topics of current importance or special interest or need.

455: Biotechnology and Bioprocesses. 0-3-3. Preq., BIEN 301, 401. Introduction to biotechnology and bioprocesses. Microbiology and biochemical reactions are reviewed. Enzyme kinetics, microbial growth transport phenomena, and design of biochemical reactors are studied. Cross-listed with CHEN 455. **(G)**

500: Systems Physiology for Biomedical Engineers. 0-4-4. Preq. Graduate standing and permission of the instructor. Principles of human physiology, including cellular physiology, and the nervous, muscular, cardiovascular, and respiratory systems for engineers. Graduate core course.

501: Physiological Modeling I. 0-3-3. Preq., BIEN 500 and Differential Equations, or consent of instructor. Principles and applications of transport phenomena to biomedical systems and devices. Distributed, lumped, and lumped-distributed modeling. Graduate core course.

502: Biotransport Phenomena. 0-3-3. Preq., BIEN 501. A continuation of BIEN 501.

503: Physiological Modeling II. 0-3-3. Preq., BIEN 501 or consent of instructor. Application of mathematical modeling and engineering analysis to physiological components and systems. Feedback mechanisms for homeostasis. Computer project implementation. Graduate core course.

510: Bioinstrumentation. 0-4-4. Preq., Graduate standing and consent of instructor. Introduction to medical instrumentation systems, biosensors, biopotentials, signal conditioning, analog-to-digital conversion, and signal processing. Graduate core course.

515: Biosensors and Their Applications. 4-2-3. Permission of instructor. Introduction to biosensors in general with special emphasis on oxygen biosensors and their development. Surgical techniques and laboratory procedures for animal experimentation.

540: System Analysis and Mathematical Modeling of Physiological Phenomena. 0-3-3. Preq., permission of instructor. The course deals with the analysis of biological systems and the theory behind the development and solution of mathematical models for the description of biological system behavior.

550: Special Topics. 3 hours credit. Preq., Permission of instructor. May be repeated for credit. Selected topics dealing with advanced subjects in Biomedical Engineering.

551: Research and Thesis in Biomedical Engineering. 0-0-3. Preq., open to M.S. Graduate Students in Biomedical Engineering. Registration in any quarter may be for 3 semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem; technical literature survey required; development of engineering research techniques.

556: Biomedical Engineering Internship. 20-0-6. Preq., permission of instructor. Graduate level internship emphasizing application of engineering design principles in a research, health care or rehabilitation setting.

557: Special Topics: Biomedical Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of biomedical engineering. May be repeated as topics change.

560: Review of Assistive Technology in Rehabilitation. 0-3-3. Preq., permission of instructor. Study of physical disabilities and the rehabilitation process.

562: Rehabilitation Engineering & Assistive Technology I. 3-2-3. Preq., BIEN 560. Assessment and the development of engineering solutions in rehabilitation. Emphasis on seating and positioning, mobility, work, and activities of daily living.

563: Rehabilitation Engineering & Assistive Technology II. 3-2-3. Preq., BIEN 560. Assessment and the development of engineering solutions in rehabilitation. Emphasis on transportation and augmentative communication.

570: Artificial Intelligence Applications in Biomedical Engineering. 0-3-3. Preq., Prior introduction to artificial intelligence fundamentals. Artificial intelligence and expert systems application in medical and biomedical problems. Fundamental contributions of medical expert systems.

575: Artificial Neural Networks. 0-3-3. Presentation of foundational concepts and constructs used to analyze and characterize artificial neural network paradigms, their attributes, their applications and their implementations.

599: Graduate Seminar. 0-1-1. (Pass/Fail). Issues in graduate education. Presentations of current topics in research, teaching, and practice. May be repeated for credit.

651: Special Topics: Research. 0-0-3. Preq., open to Ph.D. candidates in Biomedical Engineering who have not completed their academic language and General Comprehensive Examination requirements. This course represents a limited research project, which will lead to a comprehensive and well-designed dissertation research proposal. A grade will be submitted at the end of each quarter for this course.

BUSINESS COMMUNICATION (BSCM)

305: Communication. 0-3-3. Preq., ENGL 102. Theory and nature of communication in organizational settings, interpersonal communication, written business communication, listing, communications. Analysis of business problems and preparation of written/oral solutions.

435: User Interfacing. 0-3-3. Preq., BSCM 305, and CIS 310, 339. The unique interpersonal skills of a system analyst are explored throughout the life cycle of a system development.

520: Directed Research and Readings. 0-3-3. Research methodology; problems requiring independent organization of research, implementation, outline of solution, and preparation of reports. Emphasis placed on problem solving for policy-making decisions.

620: Business Research Methods. 0-1-1. A study of research methodology used in business administration, a review of research completed in respective DBA areas, and the development of a dissertation proposal. (May be repeated for a total of 3 hours credit.)

BUSINESS LAW (BLAW)

255: Legal Environment of Business. 0-3-3. Studies relations and effect of law on business, society, and the individual, including ethical considerations, history, court system, torts, government regulation, contracts, and business organization.

356: Commercial Law. 0-3-3. A study of specific topics of law essential to the business decision-making process. Areas of law covered include contracts, commercial paper, agency, and sales.

410: Business Law for Accountants. 0-3-3. Preq., BLAW 255 and senior standing. A concentrated study of all topical areas of business law. Coverage includes contracts, credit transactions, governmental

regulations, business organizations, bankruptcy, and property and related topics. (G)

441: Real Property. 0-3-3. Preq., BLAW 255. Estates in land, titles, deeds, mortgages, leases, land contracts, minerals, easements and successions.

445: Legal Aspects of Government and Business. 0-3-3. Preq., BLAW 255 or special permission of the instructor. A study of landmark law cases with special emphasis placed on guideline interpretive decisions of significance to management.

CHEMICAL ENGINEERING (CMEN)

202: Chemical Engineering Calculations. 3-2-3. Coreq., ENGR 122, MATH 242. Problems and recitation in material and heat balances involved in chemical processes. Application of Chemical Engineering and chemistry to manufacturing in chemical industries.

213: Unit Operations-Design I. 0-3-3. Preq., CMEN 202, 254, MATH 244. Design procedures for equipment and processes involving fluid flow and fluid mixing, with emphasis on computer assisted design techniques.

254: Laboratory Measurements and Report Writing. 3-0-1. Preq., CMEN 202 and completion of integrated freshman engineering curriculum. A study of applied analytical and statistical procedures and measurement of process variables in chemical processing and an introduction to technical report writing.

304: Transport Phenomena. 0-3-3. Preq., CMEN 213, 313, 413, MATH 245. Fundamental principles of energy, mass, and momentum transfer and transport processes.

313: Unit Operations-Design II. 0-3-3. Preq., CMEN 213 or consent of instructor. Design procedures for equipment and processes involving heat transfer, with emphasis on computer assisted design techniques.

332: Chemical Engineering Thermodynamics II. 0-3-3. Preq., ENGR 222. Estimation of thermodynamic properties from equations of state. Application of thermodynamic equilibria to physical and chemical equilibria. Energy analysis of processes.

353: Chemical Engineering Junior Laboratory. 3-0-1. Preq., CMEN 254, 313, and ENGL 303. Laboratory study of fluid phenomena, heat transfer processes and equipment, and evaporation.

402: Chemical Reaction Engineering. 0-3-3. Preq., CHEM 312; senior standing in CMEN. Homogenous and heterogeneous chemical reaction kinetics, applications to ideal and real reactor types. (G)

407: Instrumentation and Automatic Process Control. 3-2-3 Preq., senior standing in CMEN. Survey of process instrumentation methods, and the analysis and design of feedback, feed forward, and cascade control systems. (G)

408: Pulp and Paper Processes. 0-3-3. Preq., senior standing in CMEN. Introduction to the pulp and paper industry, its terminology, technology and economics. Conversion of various cellulosic materials into unbleached pulp and paper products. (G)

411: Environmental Chemodynamics. 0-3-3. Preq., CMEN 413 and senior standing in CMEN. A study of the modeling and prediction of the movement and fate of synthetic chemicals in the air-water-earth environments. Cross-listed with CVEN 411. (G)

413: Unit Operations-Design III. 0-3-3. Preq., CMEN 313. Application of design procedures for equipment and processes involving evaporation, distillation, leaching, extraction, gas absorption and desorption, with emphasis on computer assisted design techniques.

415: Theory and Practice of Radiation Protection and Shielding. 0-3-3. Preq., senior standing. An introduction to principles of dosimetry. The concepts of probability of causation, risk assessment, and methods of establishing exposure limits will be discussed. (G)

430: Chemical Plant Design I. 0-2-2. Preq., senior standing in CMEN, ECON 215. An introduction to applied process economics and to process hazards, their identification and reduction.

432: Chemical Plant Design II. 0-2-2. Preq., senior standing in CMEN and CMEN 430. Comprehensive problems are assigned, the solution of which enables one to calculate dimensions and capacities of required plant equipment. Computer applications.

434: Chemical Plant Design III. 0-2-2. Preq., CMEN 432. CMEN 432 continued.

435: Polymer Engineering. 0-3-3. Preq., Senior standing in CMEN or consent of the instructor. Polymer technology and processes including polymer structure, states, and transitions; kinetics of polymerization; molecular weight determination; viscous flow; mechanical properties; polymer degradation; analysis and identification. (G)

442: Process Optimization. 0-3-3. Preq., senior standing in CMEN. An objective study of the present status of optimization methodology as applied to the chemical process industries. Both deterministic and non-deterministic systems are considered. (G)

443: Air Pollution Control Design. 0-3-3. Preq., Senior standing in CMEN or consent of instructor. An overview of the air pollution problem. Design of devices to control emissions (VOC's, NOx, SO2, participates, etc.) Cost estimation of air pollution control systems. (G)

450: Special Problems. 1-4 semester hours credit. Preq., senior standing in CMEN. Problems covering selected topics of current importance or special interest or need. (G)

451: Senior Chemical Engineering Laboratory. 6-0-2. Preq., CMEN 353 and 413 or consent of instructor. Laboratory work in humidification, drying, distillation, absorption, extraction, and kinetics.

452: Special Projects Laboratory. 1 hour credit. Preq., senior standing in CMEN. Selected comprehensive problems. Study and/or laboratory development of: industrial unit operations; new chemical processes; improvement of established processes; economic evaluations. Theoretical studies.

455: Biochemical Engineering. 0-3-3. Preq., CMEN 402 or consent of instructor. Introduction to biotechnology and bioprocesses. Microbiology and biochemical processes are reviewed. Enzyme kinetics, microbial growth transport phenomena, and design of biochemical reactors are studied. Cross-listed with BIEN 455. (G)

456: Hazardous Waste Management. 0-3-3. Preq., senior standing in CMEN. A study of the legislation, regulation, technology, and business matters relating to hazardous waste management. (G)

475: Combustion, Fires and Explosions. 0-3-3. Preq., senior standing in CMEN. Nature of combustion, controlled and free burning fires, and evaluation of explosion hazards. (G)

501: Advanced Unit Operations. 0-3-3. Design calculations applicable to various unit operations including drying, humidification, absorption, adsorption, distillation, heat exchangers, ion exchange, cooling towers and filtration.

504: Advanced Chemical Engineering Kinetics. 0-3-3. Homogeneous reactions. Catalytic reactions. Mass and heat transfer in catalytic beds. Catalytic reactor design. Uncatalyzed heterogeneous reactions.

513: Transport Phenomena. 0-3-3. A course in which advanced concepts on momentum, energy, and mass transport is explored. Emphasis is placed on unsteady state behavior, turbulence, and recent developments in the literature.

521: Energy Analysis of Industrial Processes. 0-3-3. Preq., An undergraduate course in thermodynamics. The application of the concept of exergy, or energy availability, to the systematic analysis of processes and plants to make most efficient use of limited energy resources.

522: Advanced Thermodynamics. 0-3-3. The relations of thermodynamic properties are developed. Problems on the expansion and compression of non-gases, liquefaction, low temperature separation are studied.

524: Seminar. 0-1-1 each. Surveys, investigations, and discussions of current problems in Chemical Engineering.

550: Special Problems. 1-4 semester hours. Preq., consent of instructor. Selected topics dealing with advanced problems in chemical engineering and design of equipment. The problems and projects will be treated by current methods used in professional practice.

551: Research and Thesis in Chemical Engineering. Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem; technical literature survey required; development of engineering research techniques.

557: Special Topics: Chemical Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of chemical engineering. May be repeated as topics change.

CHEMISTRY (CHEM)

100: General Chemistry. 0-2-2. Preq., or Coreq., MATH 101, or 111, or 240. Fundamental principles of chemistry: Chemistry and measurement, atomic symbols and chemical formulas, stoichiometry, gases and thermochemistry.

101: General Chemistry. 0-2-2. Preq., CHEM 100. Continuation of CHEM 100: Atomic and molecular structure, theories of molecular bonding, liquids, solids and solutions.

102: General Chemistry. 0-2-2. Preq., CHEM 101. Continuation of CHEM 101: Rates of reaction, study of chemical equilibria including those

involving acids, bases, sparingly soluble salts and complex ions, thermodynamics of equilibrium and introductory electrochemistry.

103: General Chemistry Laboratory. 4 1/4-0-1. Coreq., CHEM 101. Laboratory practice in general chemistry.

104: General Chemistry Laboratory. 4 1/4-0-1. Preq., CHEM 103. Continuation of CHEM 103.

107: General Chemistry. 0-3-3. Preq., or Coreq., MATH 101, or 111, or 240. Fundamental principles of chemistry; chemistry and measurement, atomic symbols and chemical formulas, stoichiometry, gases and thermochemistry. Atomic and molecular structure, theories of molecular bonding.

108: General Chemistry. 0-3-3. Preq., CHEM 107. Continuation of CHEM 107. Liquids, solids, and solutions. Rates of reaction, study of chemical equilibria including those involving acids, bases, sparingly soluble salts and complex ions, thermodynamics of equilibrium and introductory electrochemistry.

120: An Introduction to Inorganic Chemistry. 0-3-3. Topics covered will include scientific units, states of matter, the electronic structure of atoms, the chemical bond, solutions, reaction kinetics, acid-base theory, and buffers.

121: An Introduction to Organic Chemistry and Biochemistry. 0-3-3. Preq., CHEM 120 or 102. Survey of hydrocarbons and their derivatives; biomolecules including proteins, sugars, lipids, and nucleic acids. Not to be used as a prerequisite for advanced chemistry courses.

122: Chemistry Laboratory. 4-0-1. Preq., CHEM 120. Basic laboratory experiments in inorganic, organic, and biochemistry.

205: Analytical Chemistry. 4 1/4-3-4. Preq., CHEM 102. Theory and practice of analytical Chemistry.

250: Organic Chemistry. 0-2-2. Preq., CHEM 102. Introduction to organic chemistry with emphasis on structure and reactivity of aliphatic hydrocarbons and alkyl halides.

251: Organic Chemistry. 0-2-2. Preq., CHEM 250; Coreq., CHEM 253. Continuation of CHEM 250 with emphasis on aromatic hydrocarbons, alcohols, aldehydes, ketones, and related reaction mechanisms and spectroscopy.

252: Organic Chemistry. 0-2-2. Preq., CHEM 251; Coreq., CHEM 254. Continuation of CHEM 251 with emphasis on carbonyl compounds, aliphatic and aromatic amines, phenols, carbohydrates and related reaction mechanisms.

253: Organic Chemistry Laboratory. 4 1/4-0-1. Preq., CHEM 102; Coreq., CHEM 251. Selected experiments emphasizing both laboratory operations and related basic principles and mechanisms.

254: Organic Chemistry Laboratory. 4 1/4-0-1. Preq., CHEM 253; Coreq., CHEM 252. Introduction to multi-step organic syntheses and related reaction mechanisms.

281: Inorganic Chemistry. 4 1/2-2-3. Preq., CHEM 102 and 104. Introduction to inorganic chemistry, including a systematic study of the periodic table with emphasis on structure, properties and reactivity of the elements of inorganic compounds.

301: Introductory Physical Chemistry. 0-3-3. Preq., CHEM 102 and MATH 112 or 241. An introduction to physical chemistry, with emphasis on properties of gases, thermodynamics, chemical equilibrium, ionic equilibria, chemical kinetics, and molecular spectroscopy.

311: Physical Chemistry. 0-3-3. Preq., CHEM 102 and 252, MATH 231 and PHYS 202 or 209. Basic theories of chemistry with emphasis on gases, chemical thermodynamics and phase equilibria.

312: Physical Chemistry. 0-3-3. Preq., CHEM 311. Basic theories of chemistry with emphasis on chemical kinetics, quantum theory, statistical thermodynamics and molecular spectroscopy.

313: Physical Chemistry Laboratory. 4 1/4-0-1. Coreq., CHEM 311. Laboratory experiments in physical chemistry.

314: Physical Chemistry Laboratory. 4 1/4-0-1. Preq., CHEM 311; Coreq., CHEM 312. Continuation of CHEM 313.

351: Biochemistry. 0-3-3. Preq., CHEM 252, 254. The chemistry of biologically important compounds including fats, carbohydrates, proteins, enzymes, vitamins, and hormones.

352: Biochemistry. 0-3-3. Preq., CHEM 351. Intermediary metabolism and molecular biology of the gene.

353: Biochemistry Laboratory. 4 1/4-0-1. Coreq., CHEM 351. Techniques applicable to current biochemistry with emphasis on basic research procedures.

354: Biochemistry Laboratory. 4 1/4-0-1. Preq., CHEM 351 and CHEM 353. Techniques applicable to current biochemistry with emphasis on metabolism and molecular biology.

409: Advanced Organic Chemistry. 0-3-3. Preq., CHEM 381 and 312. Introduction to theoretical organic chemistry with emphasis on carbocation chemistry and pericyclic reactions.

420: Chemical Thermodynamics. 0-3-3. Preq., CHEM 312. An introduction to chemical thermodynamics.

424: Advanced Physical Chemistry. 0-3-3. CHEM 312 or PHYS 410 and MATH 245. A continuation of CHEM 311-312, including an introduction to quantum chemistry, and a quantum mechanical approach to the study of the structure of atoms and molecules.

450: Chemical Topics. 1-4 hour(s) credit (8). Preq., CHEM 3 12 and consent of instructor. An opportunity to observe and discuss topics of current interest in the chemical sciences. Offered on demand.

466: Instrumental Analysis. 8 1/2-2-4. Preq., CHEM 312. Theory and practice of optical methods of analysis, advanced electrical techniques, and modern separation methods. **(G)**

470: Methods, Materials and Activities for Teaching Chemistry. 0-3-3. Preq., CHEM 102 and instructor permission. A course especially designed for the high school chemistry instructor.

471: Methods, Materials and Activities for Teaching Chemistry. 4 1/2-3-4. Preq., CHEM 102 and instructor's permission. A continuation of CHEM 470.

481: Advanced Inorganic Chemistry. 4 1/2-2-3. Preq., CHEM 252, 312. An advanced study of the periodic classification of elements, their reactions, and other inorganic principles. **(G)**

490: Chemistry Seminar. 0-1-1 (3). Preq., Senior or graduate standing. Required of chemistry graduate students. Supervised organization and presentation of topics from the chemical literature. **(G)**

498: Undergraduate Research. 1-3 hours credit (6). Preq., consent of instructor. Introduction to methods of research and completion of a basic research problem.

501: Physical Organic Chemistry. 0-3-3. Preq., CHEM 409. An advanced study of the mechanisms of organic methodology used in their investigations, and organic quantum chemistry.

502: Selected Topics in Organic Chemistry. 0-3-3 (6). Preq., CHEM 409. Areas covered will vary; however they will generally include advanced organic synthesis and related structure identification with emphasis on spectroscopic techniques.

503: Topics in Chemistry. 1-3 hours credit (6). Independent study. Topics arranged to meet the needs of the student.

520: Molecular Spectroscopy. 0-3-3. Preq., CHEM 312. The relationship between molecular spectra and molecular structure.

523: Special Topics in Physical Chemistry. 0-3-3. Preq., CHEM 312. Topics will vary and will include kinetic theory of gases, molecular structure, phase rule, photochemistry, nuclear chemistry, chemical kinetics, or statistical thermodynamics.

524: Quantum Chemistry. 0-3-3. Preq., CHEM 312 or PHYS 410. Physical and chemical applications of quantum theory.

549: Practicum in Chemistry. 0-3-3 (6). Preq., 12 semester hours of graduate work. Experimental or computational study of a problem in chemistry. A survey of the relevant literature and a formal written report are required.

551: Research and Thesis in Chemistry. Registration in any quarter may be for three-semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Special Topics in Biochemistry. 0-3-3 (9). Preq., CHEM 352. Topics covered will vary and may include toxicology and clinical biochemistry.

556: Protein Chemistry. 0-3-3. Preq., CHEM 351. The chemical nature and physiology of both structural and metabolic proteins.

563: Advanced Analytical Chemistry. 0-3-3. Preq., CHEM 466. Theoretical aspects of the optical, chemical, and separation techniques of analytical chemistry.

564: Selected Topics in Analytical Chemistry. 0-3-3. The topic or topics will be selected in the general areas of chemical separations or spectroscopy by the instructor. (TECH-NLU Collaborative).

584: Chemistry of Coordination Compounds. 0-3-3. Preq., CHEM 481. A study of the structure, preparation, and properties of coordination compounds.

586: Special Topics in Inorganic Chemistry. 0-3-3. Preq. CHEM 584 or instructor's permission. A topic will be selected on a rotating basis from the following: magnetic and electric properties, solid state structures, catalysis, and group theory applications of inorganic materials.

CIVIL ENGINEERING (CVEN)

202: Civil Engineering Materials Laboratory. 4-0-1. Coreq., concurrent with MEMT 201. Introduction to laboratory testing of aggregates, concrete, asphalt, steel, and other materials used by civil engineers.

254: Plane Surveying. 4-2-3. Preq., MATH 112 or 240. Theory, field measurements, and computation and error analysis associated with land, traverse, and topographic surveys.

291: Civil Engineering Computations. 3-1-2. Preq., MATH 241. Application of microcomputers in civil engineering. Numerical techniques and statistical applications, personal productivity tools, application software.

300: The Civil Engineering Profession. 0-3-3. Preq., sophomore standing. Open only to civil engineering students. The civil engineering profession and its effect on society. History and heritage, current professional practices and techniques, concepts and challenges for the future.

304: Remote Sensing. 4-1-2. Preq., MATH 112 or 241. Basic introduction to remote sensing. Measurements and mapping from aerial photographs. Photo interpretation. Height determination by parallax.

310: Water Resources I. 0-3-3. Preq., MEMT 313. Hydrologic and hydraulic analysis of precipitation and runoff, storm water management, detention basin design, and flood frequency analysis.

314: Environmental Engineering. 3-2-3. Preq., ENGL 303, CHEM 103, . Introduction to the unit operations and processes most often encountered in water and wastewater treatment.

324: An Introduction to Soils Engineering. 4-1-2. Preq., ENGL 303, MEMT 211. Introduction to soil mechanics and its application to civil engineering. A presentation of soil properties and characteristics pertinent to an evaluation of various engineering situations, problems and designs.

325: Introduction to Foundation Engineering. 0-3-3. Preq., CVEN 324. Consideration of bearing capacity, settlement of structures, slope stability, foundation design requirements, subsurface exploration, regional soil conditions, footings, mats, and retaining walls.

332: Transportation Engineering I. 0-3-3. Preq., ENGR 122. Introduction to transportation facilities; urban transportation planning; traffic, design, safety, and the environment.

333: Transportation Engineering II. 3-2-3. Preq., CVEN 332. Design of highway and airport runway elements in a laboratory and field environment.

340: Structural Analysis & Design. 3-2-3. Preq., MEMT 211. Analysis of simple and continuous structures using classical and matrix methods. Introduction to structural design concepts.

341: Steel & Reinforced Concrete Design. 3-2-3. Preq., CVEN 340. Design of steel and reinforced concrete structures with emphasis on behavior of tension and compression members, beams, and slabs. Steel connections in elementary structures.

355: Advanced Surveying. 4-2-3. Preq., CVEN 254. Advance error propagation theory, including an introduction to least squares. Various horizontal/vertical high precision surveys; geodetic concepts and surveys; Global Positioning Systems.

357: Engineering and Construction Surveying. 4-1-2. Preq., CVEN 254. Horizontal/vertical curves; earthwork; topographic/planimetric surveys for map/drawing construction; engineering use of State Plane Coordinate System; surveys for buildings, pipelines, and others.

410: Air Pollution Fundamentals. 0-3-3. Preq., Senior standing in an engineering curriculum, or consent of instructor. History of air pollution legislation, sources, and effects of major air pollutants, and predictive capabilities with regard to air pollution. **(G)**

411: Water Resources II. 3-2-3. Preq., CVEN 310. Computer modeling of precipitation and runoff, open channel hydraulics, flood profiles, pipe networks. Applications of modeling software for hydrologic and hydraulic design.

412: Environmental Impact Analysis. 0-3-3. Preq., Senior standing in Civil Engineering or the consent of the instructor. Definition and quantification of environmental impact. Types of environmental impact studies. **(G)**

414: Bituminous Mixture Design. 3-2-3. Preq., senior standing. Selection of binders and aggregates for mixture design processes. Methods include Marshall, Hveem and SUPERPAVE. Laboratory mixes will be designated and tested. **(G)**

416: Hydraulic Facilities Design. 0-3-3. Preq., MEMT 313. Basic concepts of open channel flow. Computation of uniform and non-uniform flow. Hydraulic design of spillways, stilling basins, canals, transitions, culverts, and bends. **(G)**

417: Groundwater Hydrology. 0-3-3. Preq., CVEN 310. Groundwater occurrence, movement and quality, well hydraulics, basin development, and model studies. **(G)**

421: Portland Cement Concrete. 0-3-3. Preq., consent of instructor. Production, testing, uses, and performance of Portland cement and Portland cement concrete (PCC). Detailed investigation into PCC components. Admixtures and special concretes. **(G)**

422: Geometric Design. 0-3-3. Preq., CVEN 332. Functional design of highways, railroads and runways with emphasis on safety and efficiency of flow set intersections, curves, and interchanges. **(G)**

423: Introduction to Asphalt Technology. 3-2-3. Preq., senior standing, or consent of instructor. Production and uses of asphalt; measurement and significance of laboratory properties including viscosity, penetration, flash point, ductility, solubility, thin film oven test and specific gravity. **(G)**

424: Seminar. 0-1-1. Preq., Senior standing. Reading and discussion of assigned papers, informal talks by instructors and professional engineers, debates on matters of current interest.

425: Traffic Engineering. 0-3-3. Preq., CVEN 332. Traffic characteristics, vehicle operating characteristics, traffic control, and design of traffic facilities. Basic traffic studies, capacity, signing and signalization, speed regulation and parking. **(G)**

427: Design of Highway Pavements. 0-3-3. Preq., CVEN 324. Flexible and rigid pavement types. Factors affecting stresses and strains in pavement layers. Design criteria and structural design methods for highway pavements. **(G)**

436: Construction Equipment and Methods. 0-3-3. Preq., Junior standing, and ENGR 122 or INEN 300. Study of economics and functional applications of construction equipment. Operation characteristics are identified for selected equipment items, and are applied to typical construction situations. **(G)**

437: Contracts and Specifications. 0-2-2. Preq., CVEN 439. Legal documents of construction contracts. **(G)**

438: Estimating. 0-3-3. Preq., CVEN 254 and junior standing. Types of estimates. Material takeoff from blueprints and specifications. Detailed estimates of labor and materials. Approximate estimates. **(G)**

439: Construction Planning, Contracts and Specifications. 0-3-3. Preq., Junior standing and either INEN 300 or ENGR 122. Introduction to methods for planning, estimating, and controlling projects, construction contracts, specifications and cost impacts. Term projects required. Team efforts on problems and case studies. **(G)**

440: Foundation Engineering. 0-3-3. Preq., CVEN 325 or consent of instructor. Theory and applications in foundation engineering design; application of soil mechanics. **(G)**

443: Analysis of Continuous Structures. 0-3-3. Preq., CVEN 340; Slope-deflection, moment distribution plastic design, matrix applications, STRUDL language.

450: Special Problems. 1-4 hours credit. Preq., senior standing and consent of instructor. Planning, organization, and solution of problems in Civil Engineering.

456: Legal Aspects of Boundary Surveying. 0-3-3. Preq., CVEN 254 or consent of instructor. Legal aspects of various boundary systems. Legal principles of boundary surveys: common statute law, written/unwritten rights and rules of evidence, property descriptions/layout.

457: Practical Surveying. 40-0-3. Preq., CVEN 355, 357, or 456. An on-the-job training program; student is employed by registered professional surveyor for 300 working hours (minimum); work to be approved by program chair.

458: Introduction to Geographic Information Systems. 0-3-3. Preq., senior standing, or approval of instructor. Basic principles, functions, and engineering applications of spatial information systems; introduction to databases. Team case studies using GIS software. **(G)**

459: Introduction to Infrastructure Management. 0-3-3. Preq., junior standing. Lifecycle approach to planning, designing, and managing infrastructure (highways, streets, utilities); infrastructure decision support systems; performance measures and prediction; computer applications; case studies. **(G)**

464: Advanced Design of Concrete Structures. 0-3-3. Preq., CVEN 341. Advanced topics in the design of reinforced and prestressed concrete structures. **(G)**

466: Advanced Structural Design. 0-3-3. Preq., CVEN 341. Advanced topics in the design of steel and timber structures. Load and resistance factor design. **(G)**

468: Computational Structural Design. 0-3-3. Preq., CVEN 341. An introduction to the use of computational techniques for designing structures. Finite element method. Structural optimization. (G)

480: Introduction to Trenchless Technology. 0-3-3. Preq., CVTE 210 or MEMT 313. Basic technologies, design considerations and construction practices for underground infrastructure construction and rehabilitation with minimal ground surface disturbance.

492: Civil Engineering Design I. 3-0-1. Preq., senior standing and within 3 quarters of graduation. Open-ended design problems typical of those encountered in the Civil Engineering profession and calling for the integration of geotechnical, structures, transportation and water resources.

493: Civil Engineering Design II. 3-0-1. Preq., Coreq., CVEN 492. A continuation of CVEN 492.

494: Civil Engineering Design III. 3-0-1. Preq., CVEN 492; Coreq., CVEN 493. A continuation of CVEN 493.

495: Computer-Aided Civil Engineering Design. 4-2-3. Preq., Senior standing in Civil Engineering or consent of instructor. Integration of computers in civil engineering design applications. Emphasis is on design methodologies. Specific software applications vary. (G)

501: Frame Analysis. 0-3-3. Preq., CVEN 340. Single and multi-story frames by moment distribution, slope deflection and column analogy methods. Frames and beams with variable cross-section. Secondary stresses in trusses. Dimensional analysis and theory of models.

509: Dynamic Analysis of Structures. 0-3-3. Preq., MATH 245. Analysis of structures (SDOF and MDOF) under wind, wave, earthquake and impact forces.

510: Advanced Soil Mechanics. 0-3-3. Preq., CVEN 324. Evaluation of subsoil conditions, theory of consolidation and bearing capacity of soils; selection application and design of foundation elements of structures.

512: Design of Deep Foundations. 0-3-3. Preq., CVEN 440. Analysis and design of pile foundations, drilled shafts, piers and sheeting support systems.

514: Bituminous Mixture Design. 3-2-3.. Selection of binders and aggregates for mixture design processes. Methods include Marshall, Hveem and SUPERPAVE. Laboratory mixes will be designed and tested.

517: Advanced Pavement Design. 0-3-3. Preq., CVEN 427 or consent of instructor. Traffic and loading considerations for airfield pavements. Structural design methods for highway and airfield pavements, with emphasis on computerized design and analysis techniques.

519: Techniques for Pavement Rehabilitation. 0-3-3. Evaluation of roadway distress, roughness, friction, drainage and structural surveys will be discussed. Survey results used to identify cost-effective techniques for pavement rehabilitation.

522: Design of Temporary Structures. 0-3-3. Advanced topics in the design of temporary structures required for complex construction projects.

527: Statistical Methods in Hydrology. 0-3-3. Preq., CVEN 310. Frequency analysis, extreme value distribution, error analysis, and multiple regression analysis associated with making engineering decisions using hydrologic data.

530: Water Quality Improvement. 3-2-3. Preq., CVEN 314 or consent of instructor. Stream self-purification processes. Pollution abatement methods. Industrial waste surveys. Principles of treatment for domestic and industrial wastewaters.

531: Contaminant Transport. 0-3-3. Preq., CVEN 314, 310, or consent of instructor. Mathematical modeling of contaminant transport in surface and ground water systems.

536: Wastewater Disposal Systems. 3-2-3. Preq., CVEN 314. Advanced problems in design of domestic and industrial waste treatment systems.

550: Special Problems. 1-4 hours credit. Advanced problems in Civil Engineering will be assigned according to the ability and requirements of the student. An opportunity will be afforded to plan, organize, and complete solutions in problems of considerable magnitude with a view toward developing confidence and self-reliance.

551: Research and Thesis in Civil Engineering. Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Research and Communications Seminar. 0-3-3. Preq., 12 semester hours of graduate work. Oral and written communication of literature search.

557: Special Topics: Civil Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of civil engineering. May be repeated as topics change.

560: Transportation Systems Planning. 4-2-3. Preq., CVEN 332. A study of transportation systems as they affect travel behavior of a populace and the location of economic activities.

561: Traffic Engineering Characteristics. 0-3-3. Preq., consent of instructor. Traffic laws, ordinances, and control devices; intersection characteristics, pretimed control, traffic actuated control, arterial and network progression.

564: Feasibility Analysis of Transportation Systems. 0-3-3. Preq., consent of instructor. Goals, objectives and criteria used for decision making for transportation investments; economic analysis and treatment of intangibles and risk; non-users impact analysis.

578: Applications of Nonlinear Finite Element Analysis to Civil Engineering Problems. 0-3-3. Preq., MEMT 508 or consent of instructor. Application of the theory of the finite element method to nonlinear problems in Civil Engineering.

579: Advanced Structural Dynamics. 0-3-3. Advanced studies of the dynamic response of structures including experimental, analytical and computational procedures. Particular emphasis is given to Civil Engineering applications with a consideration of multiple degrees-of-freedom and continuous systems.

580: Trenchless Technology. 0-3-3. Preq., MEMT 313 and CVEN 324. Survey of trenchless technologies, underground infrastructure management, cured-in-place, slip lining and fold and form rehabilitation, horizontal directional drilling, pipe jacking and microtunneling. Credit will not be given for both CVEN 480 and 580.

599: Graduate Seminar. 0-1-1. Issues in graduate education. Presentations of current topics in research, teaching and practice. May be repeated for credit. (Pass/Fail).

CIVIL TECHNOLOGY (CVTE)

100: Introduction to Construction. 3-2-3. An introduction to the construction industry, the work of professional construction managers and technologies, the curriculum, and the reading of building and highway plans.

210: Basic Hydraulics. 4-2-3. Preq., MEMT 206. Physical phenomena of hydraulics with application of the fundamental laws and empirical formulae. Pressure forces on submerged areas, buoyancy, flow in closed conduits and open channels and fluid measurements.

372: Structural Mechanics and Analysis. 0-3-3. Preq. MEMT 206 and MATH 220. Theory of the mechanics of structural analysis and design. Not open to Civil Engineering majors.

373: Construction Materials. 4-2-3. Preq., ENGL 303 and MEMT 206. Mechanical behavior of engineering materials, determination of strength and other properties of materials, and construction applications.

424: Seminar. 3-0-1. Preq., senior status. Reading and discussion of assigned papers, presentation of current issues in construction, and discussions with professional construction personnel.

471: Reinforced Concrete, Foundations, and Formwork. 0-3-3. Preq., CVTE 372. Analysis and design of reinforced concrete structures, slabs, and footings. Design and selection of formwork and shoring.

473: Design of Structures. 3-2-3. Preq., CVTE 372. Design of elementary structures in timber and steel.

475: Soils in Construction. 0-3-3. Preq., MEMT 206. The nature of soils, earthwork in construction and soils testing methods.

492: Construction Project Bid Planning. 6-0-2. Preq., CVEN 439 and senior standing. Capstone construction experience that includes planning the sequence of construction operations, creating a bill of materials, and estimating the cost of a small construction project by student teams.

CLINICAL LABORATORY SCIENCE (CLAB)

450: Pathophysiology. 0-3-3. A case history approach is taken in the correlation of laboratory data with clinical observation to diagnose disease.

451: Laboratory Studies in Pathophysiology. 4 1/4-0-1. Preq., or Coreq., CLAB 450. Student application of modern laboratory techniques used in the clinical pathology laboratory with emphasis on clinical hematology, clinical chemistry, urodynamics and clinical immunology.

457: Professional Practices. 0-2-2. Healthcare administration, educational techniques, career opportunities/ development, QA/QA, ethics, interview techniques, plus credentialing and accreditation in medical technology are discussed.

460: Clinical Hematology. 2-6 semester credit hours. Preq., consent of instructor. Advanced concepts in the theory, application and medical interpretation of hematological and hemostatic mechanisms and methods.

461: Clinical Hematology Laboratory. 1-5 semester credit hours. Preq., consent of instructor. Instruction and laboratory practice in the development and use of advanced analytical procedures and instrumentation in clinical hematology and hemostasis.

462: Clinical Serology and Immunology. 1-4 semester credit hours. Preq., consent of instructor. Advanced concepts in the theory, application and medical interpretation of serological and immunological mechanisms and methods.

463: Clinical Serology and Immunology Laboratory. 1-4 semester hours credit. Preq., consent of instructor. Practical instruction and laboratory practice in the performance of serological and immunological procedures.

464: Clinical Bacteriology. 2-5 semester credit hours. Preq., consent of the instructor. Advanced concepts in the use and interpretation of medical bacteriological procedures and data.

465: Clinical Bacteriology Laboratory. 3-6 semester credit hours. Preq., consent of the instructor. Instruction and laboratory practice in the development and use of advanced analytical procedures and instrumentation in clinical bacteriology.

466: Clinical Immunohematology. 1-4 semester credit hours. Preq., consent of the instructor. An advanced study of the principles of immunohematology necessary to provide a patient with a safe blood transfusion.

467: Clinical Immunohematology Laboratory. 1-4 semester credit hours. Preq., consent of instructor. Practical instruction and laboratory practice in immunohematological procedures utilized in a hospital blood bank.

468: Clinical Chemistry. 3-6 semester credit hours. Preq., consent of the instructor. Advanced concepts in the theory application, and medical interpretation of clinical biochemical mechanisms and methods.

469: Manual Clinical Chemistry Lab. 1-3 semester credit hours. Preq., consent of instructor. Practical instruction and laboratory practice in the performance of manual clinical chemistry procedures.

470: Special Clinical Chemistry Laboratory. 1-3 semester credit hours. Preq., consent of instructor. Practical instruction and laboratory practice in the performance of special clinical chemistry procedures.

471: Automated Clinical Chemistry Lab. 1-2 semester credit hours. Preq., consent of instructor. Practical instruction and lab practices in the performance of automated clinical chemistry procedures.

472: Clinical Chemistry Toxicology Laboratory. 1-2 semester credit hours. Preq., consent of instructor Practical instruction and laboratory practice in the performance of toxicological procedures.

473: Clinical Chemistry Radioimmunoassay Laboratory. 1 semester credit hour. Preq., consent of instructor. Practical instruction and laboratory practice in the performance of radioimmunoassay procedures.

474: Clinical Urinalysis. 1-3 semester credit hours. Preq., consent of instructor. Advanced concepts in the use and interpretation of urinalysis procedures and data.

475: Clinical Urinalysis Laboratory. 1-3 semester credit hours. Preq., consent of instructor. Practical instruction and laboratory practice in the performance of urinalysis procedures.

476: Clinical Parasitology, Mycology and Mycobacteriology. 1-2 semester credit hours. Preq., consent of instructor. Advanced concepts in the use and interpretation of procedures and data in clinical parasitology, mycology, and mycobacteriology.

477: Clinical Parasitology, Mycology and Mycobacteriology Laboratory. 1-2 semester credit hours. Preq., consent of instructor. Instruction in laboratory practice in the development and use of advanced analytical procedures in clinical mycology, parasitology, and mycobacteriology.

478: Clinical Laboratory Administration. 1-2 semester credit hours. Preq., consent of instructor. Modern management concepts for the clinical laboratory.

479: Clinical Histopathology. 1-5 semester credit hours. Preq., consent of instructor. Advanced concepts in the use and interpretation of histotechnological procedures and findings.

480: Clinical Medical Technology Problems. 1-8 semester credit hours. Preq., consent of instructor. An introduction to emerging medical technologies.

483: Clinical Parasitology. 1-2 semester credit hours. Identification, clinical significance, and methods of prevention of parasitic infections.

484: Clinical Parasitology Laboratory. 1-2 semester credit hours. Instruction and laboratory practice in the development and application of medical parasitology laboratory methods.

485: Clinical Mycology. 1-2 semester credit hours. Identification, clinical significance and methods of prevention of mycotic infection.

486: Clinical Phlebotomy and Specimen Procurement. 1-3 semester credit hours. Preq., consent of instructor. Instruction and laboratory practice in phlebotomy and the collection of other specimens for clinical analysis. Specimen preservation and safe lab practices are included.

487: Clinical Hemostasis. 1-4 semester hours credit. Preq. consent of instructor. The theory of the coagulation cascade, analytical procedures that monitor this process and the clinical significance of coagulopathies are discussed.

488: Clinical Hemostasis Laboratory. 1-4 semester hours credit. Laboratory procedures which assess the coagulation cascade and related processes.

489: Clinical Chemistry Laboratory. 3-8 semester hours credit. Practical instruction and laboratory practice in clinical chemistry procedures, including associated instrumental analysis.

COMPUTER INFORMATION SYSTEMS (CIS)

102: Typewritten Communication. 0-3-3. Preq., Basic knowledge in typewriting/keyboarding. Emphasis on formatting and production of typewritten communications including business forms, internal and external correspondence, and complicated reports. (Meets intermediate typewriting requirements for Business Education majors.)

110: Computer Tools for Business. 1-2-3. The development and enhancement of computer skills and knowledge using current business software.

310: Principles of Information Systems. 0-3-3. Preq., CIS 110, junior standing. Introduction to concepts and principles of information system resources, analysis, development, management, and applications.

323: Database System Management. 0-3-3. Preq., CIS 310, 339. Managing and communicating the data resource using database principles and user-oriented data languages.

335: Application Development for the Internet. 0-3-3. Preq., CIS 310, 339. Programming for Internet- and Intranet-based business applications. The principles of good software engineering and program clarity will be stressed.

337: Business Applications Development: Current Programming Techniques. 0-3-3. Preq., CIS 310, 339. Provides overview of business application development, using program development methodology. Emphasizes object-oriented and data-driven languages for business students with limited programming background.

339: Business Applications with COBOL. 0-3-3. Preq., CIS 110. Applying program and file structures to design programs for business applications. Development of COBOL language skills for coding the designs.

401: Internship in CIS I. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in CIS II. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

444: Network Design & Implementation. 0-3-3. Preq., CIS 310, 339. Issues of designing, implementing, and managing computer networks, including both Local Area Networks (LANs) and Wide Area Networks (WANs). **(G)**

450: Systems Analysis, Design, & Implementation. 0-3-3. Preq., CIS 323, 444. An in-depth life cycle approach to information systems analysis, design, and implementation. **(G)**

510: Information Resource Management. 0-3-3. Attention is given to strategic implementation of technology, secure and effective systems, externally focused systems, along with the historical and social environment of information systems.

515: Decision Support Systems. 0-3-3. Information technology in the firm and non-profit organization with a focus on using computers, data bases, knowledge bases, graphics, and models to support decision making.

535: Advanced Computer Applications. 0-3-3. Study of the development and application of Expert Systems and use of development shells. Topics include: Knowledge Acquisition, System Development, and Validation/Verification.

550: Directed Study in Computer Information Systems. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of computer information systems.

615: Decision Support Systems. 0-3-3. Requires Doctoral standing. May require additional class meetings. Information technology in the firm and non-profit organization with a focus on using computers, data bases,

knowledge bases, graphics, and models to support decision making. Credit will not be given for CIS 615 if credit is given for CIS 515.

625: Information Systems Project Management. 0-3-3. Preq., DBA student or consent of instructor. Intensive review of theories and literature on information systems (IS) project development and management. IS project management techniques and managerial issues will be examined. A research project proposal in IS management will be developed and completed.

630: Seminar in Computer Information Systems. 0-3-3. Study of current topics in the discipline of Computer Information Systems. In-depth analysis of a specialized research field along with an investigation of the literature.

635: Advanced Computer Applications. 0-3-3. Requires Doctoral standing. May require additional class meetings. Study of the development and application of Expert Systems and use of development shells. Topics include: Knowledge Acquisition, System Development, and Validation/Verification. Credit will not be given for CIS 635 is credit is given for CIS 535.

650: Directed Study in Computer Information Systems. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of computer information systems.

685: Comprehensive Exam in Computer Information Systems. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in CIS. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in CIS. Requires consent of graduate director.

COMPUTER SCIENCE (CSC)

100: Overview of Computer Science. 0-3-3. Preq., MATH 101 or equivalent. An overview of the field of computing; history, impact on society, and current trends; together with an introduction to operating systems, editors, and rudimentary programming.

102: Programming with FORTRAN. 0-3-3. Preq., Eligible for MATH 111 or 240. Problem analysis, algorithm development, data and control structures, and interpretation of results, with emphasis on numerical applications.

109: Computer Programming. 0-3-3. (cannot be taken for credit toward any Computer Science degree) Fundamentals of computer programming. Emphasis is placed on problem analysis, algorithm development, and data and control structures.

120: Introduction to Computer Programming. 0-3-3. Preq., CSC 100 or equivalent and MATH 111 or 240. An introduction to program development. Emphasis is placed on problem analysis, algorithm development, data and control structures.

210: Discrete Mathematics for Computer Scientists. 0-3-3. Preq., CSC 120 and MATH 112 or 241. An overview of the mathematical foundations of computing. Topics include sets, symbolic logic, relations, functions, combinatorics, induction, trees, graphs, and Boolean algebra.

220: Data Structures. 0-3-3. Preq., CSC 120. The definition, representation, and manipulation of basic data structures such as arrays, stacks, queues, trees, and graphs. Practical applications of these structures will be emphasized.

230: Software Design. 0-3-3. Preq., CSC 220. Design, construction and maintenance of large software systems. Topics include project planning, requirements analysis, software design methodologies, software implementation and testing, maintenance.

240: Introduction to Concurrent Programming. 0-3-3. Preq., CSC 220. Fundamentals of concurrent, parallel, and distributed computing. Topics include semaphores, monitors, rendezvous, remote procedure calls, and asynchronous message passing, SIMD model, MIMD architectures.

251: Computer Organization & Assembly Language. 0-3-3. Preq., CSC 220. Introduction to computer organization and operation, data representation and manipulation, assembly language programming, register level operations, peripheral device interfaces.

265: Introduction to Digital Design. 0-2-2. Preq., CSC 251; Coreq., CSC 269. Introduction to digital design techniques, Boolean algebra, combinational logic, minimization techniques, simple arithmetic circuits, programmable logic, sequential circuit design, registers and counters.

269: Digital Design Lab. 3-0-1. Coreq., CSC 265. Laboratory for digital design techniques, combinational and sequential logic design, registers and counters.

299: Cooperative Education Applications. 40-0-1 (7). Preq., Admission to the College of Engineering and Science Cooperative Education Program. Pass/Fail.

310: Theory of Computing. 0-3-3. Preq., CSC 220 and MATH 311. An overview of formal languages, the abstract models of computing capable of recognizing those languages, and the grammar used to generate them.

325: Advanced Data Structures and Algorithms. 0-3-3. Preq., CSC 220. Advanced data structures and algorithm design. Topics include specialized trees, graphs, sets and tables, advanced searching and sorting, complexity analysis, and algorithm design techniques.

330: Programming Languages. 0-3-3. Preq., CSC 240, 325. Techniques for specifying the syntax and semantics of programming languages. Language concepts; execution environments; comparative analysis of programming languages.

345: Operating Systems. 0-3-3. Preq., CSC 240 & 265. An introduction to operating systems concepts. Topics include processor management, storage management, device management, performance, security, and case studies of common operating systems.

364: Computer Architecture. 0-3-3. Preq., CSC 265 & 269. Architecture and organization of computer systems. Topics include the processor, control unit and microprogramming, computer arithmetic, memory hierarchy and memory management, input/output, instruction sets.

404: Senior Capstone. 0-3-3. Preq., CSC 325 & senior standing. This course provides a forum for discussion of the social and ethical aspects of computing. Communication skills will be emphasized through professional presentations and formal written essays.

419: Special Topics in Theory of Computing. 0-3-3. Preq., consent of instructor. Selected topics in the area of computing theory that are of current importance or special interest.

420: Design and Analysis of Algorithms. 0-3-3. Preq., CSC 325 or consent of instructor. Design and analysis of efficient algorithms. Topics include complex data structures, advanced searching and sorting, algorithm design techniques, and complexity analysis.

425: Discrete Mathematics, Data Structures and Algorithms. 0-4-4. Preq., Consent of instructor (cannot be applied for credit toward any Computer Science degree). Mathematical foundations of computer science; definition, application and implementation of abstract data types; algorithm design and analysis techniques. **(G)**

429: Special Topics in Software Development. 0-3-3. Preq., consent of instructor. Selected topics in the area of software design that are of current importance or special interest.

430: Database Management Systems. 0-3-3. Preq., CSC 325 or consent of instructor. Database concepts, organizations and applications; database management systems; implementation of a simple database. **(G)**

436: Compiler Design. 0-3-3. Preq., CSC 310, 330 or consent of instructor. Principles of compiler design; assembler design; lexical analysis; syntax analysis; automatic parser generations; error detection and recovery. **(G)**

437: Programming Language Paradigms and Software Development. 0-4-4. Preq., CSC 425 and consent of instructor (cannot be applied for credit toward any Computer Science degree). Imperative, functional, logical and object-oriented paradigms; programming language semantics and language translation; specification, design, implementation, validation, and maintenance of large software systems. **(G)**

439: Special Topics in Programming Environments. 0-3-3. Preq., consent of instructor. Selected topics in the area of programming environments that are of current importance or special interest.

445: Architecture and Operating Systems; Parallel Computing. 0-4-4. Preq., CSC 425 and consent of instructor (cannot be applied for credit toward any Computer Science degree). Digital logic, instruction set architectures, microprocessor design; storage management, process synchronization and communications, device management; introduction to parallel architectures, languages and algorithms. **(G)**

449: Special Topics in Operating Systems. 0-3-3. Preq., consent of instructor. Selected topics in the area of operating systems that are of current importance or special interest.

450: Computer Networks: 0-3-3. Preq., CSC 345 or consent of instructor. An overview of computer networks. Topics include network topologies, layers, local area networks, and performance measurement and analysis. **(G)**

464: Advanced Digital Design. 0-3-3. Preq., CSC 265. Synchronous sequential circuits, FSM optimization and implementation, testing, level-mode sequential design, race and hazards, advanced ALU, programmable logic devices, CAD tools and HDLs.

466: Microprocessor Systems Design. 0-3-3. Preq., CSC 364. Microprocessor-based system design, bus design, memory systems, input/output interfacing and DMA, microprocessor-based laboratory project.

468: Introduction to VLSI. 0-3-3. Preq., CSC 265. VLSI design methodologies, fabrication and layout, combinational and sequential design in VLSI, subcell design, system design, advanced design techniques.

469: Special Topics in Computer Architecture. 0-3-3. Preq., consent of instructor. Selected topics in the area of computer architecture that are of current importance or special interest.

470: Computer Graphics. 0-3-3. Preq., CSC 325 or consent of instructor. Fundamentals of two and three dimensional computer graphics. Topics include line drawing, polygon rendering, clipping algorithms, two and three dimensional transformations, and projection techniques. (G)

472: Human-Computer Interface. 0-3-3. Preq., CSC 230 and 325. Theory, design, and implementation of graphical human-computer interface strategies. Topics include interface layout, visualizing knowledge, comparison of user interfaces, and hypertext/hypermedia.

475: Artificial Intelligence. 0-3-3. Preq., CSC 330 or consent of instructor. The design and implementation of artificially intelligent programs. Topics include game playing, heuristic search, logic, knowledge representation, and reasoning strategies. Social implications are also discussed. (G)

479: Special Topics in Computer Applications. 0-3-3. Preq., consent of instructor. Selected topics in the area of computer applications that are of current importance or special interest.

490: Applied Computing Project. 1-3 hours credit. Preq., junior standing in Computer Science or equivalent. Independent investigation of a problem in computing.

499: Special Topics in Computer Science. 0-3-3. Preq., consent of instructor. Selected topics of current importance or special interest.

505: Expert Systems. 0-3-3. Preq., CSC 475 or consent of instructor. Current topics in expert system design, knowledge acquisition, explanation generation and knowledge representation. A substantial expert system design, implementation and testing project is required.

512: Programming Language Semantics. 0-3-3. Preq., CSC 310 or CSC 436 or consent of instructor. Syntax specification using attribute grammars and two level grammars, operational semantics, translational semantics, formal semantic techniques such as denotational semantics, algebraic specification, and axiomatic semantics.

520: Advanced Analysis of Algorithms and Complexity. 0-3-3. Preq., CSC 420 or consent of instructor. Formal analysis of time and space requirements of various algorithms, greedy algorithms, divide-and-conquer, dynamic programming, P and NP algorithms; Turing machines and unsolvability.

521: Advanced Computer Architectures. 0-3-3. Preq., CSC 364. Topics include: pipeline systems design, processor design techniques (concepts, analysis, performance comparison, implementation, commercial processors), memory system design, interconnection media.

530: Database Theory. 0-3-3. Preq., CSC 430 or consent of instructor. Data models, relational algebra and relational calculus, data dependencies and schema normalization, Datalog, recovery and concurrency control, distributed database environments.

532: Advanced Topics in Software Engineering. 0-3-3. Preq., CSC 230 or consent of instructor. Readings in requirements analysis, formal specification techniques, software design techniques, CASE tools, software metrics, software verification and validation, quality assurance and software safety.

534: Performance Measurement and Evaluation. 0-3-3. Preq., CSC 345 or consent of instructor. Computer systems performance; analysis techniques; data acquisition methods; simulation techniques; interpretation of results.

541: IIigh Performance Computer Architecture. 0-3-3. Preq., CSC 364. Topics include: principles of scalable performance, multiprocessor system design, message-passing systems, vector computers, data flow computers, and multithreaded architecture.

550: Special Problems. 1-4 semester hour credit. Individual research and investigation of a problem in computer science or computing practice.

551: Research and Thesis in Computer Science. Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

554: Advanced Networking. 0-3-3. Preq., CSC 450 or consent of instructor. May be repeated with change in subject matter. Selected research topics of current interest in the field of computer communications and networks.

555: Practicum. 0-3-3 Maximum credit allowed is three semester hours. Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of a problem in computer science; technical literature survey required; development of a computer-based solution.

557: Special Topics: Computer Science. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of computer science. May be repeated as topics change.

570: Advanced Topics in Computer Graphics. 0-3-3. Preq., CSC 470 or consent of instructor. Techniques used to produce realistic images of three-dimensional objects on computer graphics hardware. Topics include: reflection models, shading techniques, ray tracing, texture and animation.

575: Advanced Topics in Artificial Intelligence. 0-3-3. Preq., CSC 475 or consent of instructor. Advanced topics in artificial intelligence including: problem-solving systems, natural language understanding, intelligent tutoring systems, learning and neural networks.

581: Parallel Algorithms. 0-3-3. Preq., CSC 240. Models of parallel computers, basic communications operations, algorithms for searching, sorting, graph structures, and systolic systems, dynamic programming, performance and scalability of parallel systems.

582: Parallel Computational Methods. 0-3-3. Preq., CSC 240, MATH 415. Parallel implementations of FFT, interpolation, integration, Eigensystems, matrix maximization, ODEs, PDEs.

583: Computational Solutions for PDE I. 0-3-3. Preq., MATH 414. Finite difference schemes and their accuracy, stability, and convergence. Schemes for parabolic and hyperbolic PDEs. Emphasis on program implementation.

584: Computational Solutions for PDE II. 0-3-3. Preq., CSC 583 or MATH 574. Finite difference schemes for elliptic PDEs, iterative methods, and introduction to finite element methods and multigrid methods. Emphasis on program implementation.

COUNSELING (COUN)

400: Introduction to Counseling. 0-3-3. Introductory course for professional workers. Includes purposes and scope of counseling service, concepts, principles and basic techniques of counseling. (G)

401: Student Personnel Services. 0-3-3. A study of student personnel programs in colleges and universities. This course may not be taken for graduate credit.

460: Behavioral Counseling. 0-3-3. A non-cognitive approach to counseling that presents the necessary attitudes, concepts, principles, and skills for individual counseling.

500: Principles and Administration of Guidance Services. 0-3-3. An overview of the current principles and practices involved in various types of guidance and counseling services.

505: Analysis of the Individual. 3-2-3. Preq., PSYC 542 or equivalent. This course offers students an orientation to psychological testing procedures, their interpretation, evaluations and use in the understanding of clients.

506: Introduction to Rehabilitation Counseling. 0-3-3. Philosophical, social, psychological and legislative bases of rehabilitation; nature and scope of the process and functions of rehabilitation counselors.

507: Case Management in Rehabilitation Counseling. 0-3-3. Development of case management in procedures and skills: integration of theory and practice.

508: Introduction to Counseling Theories. 0-3-3. A detailed study of a selection of the best known schools of counseling theory.

510: Counseling the Elderly. 0-3-3. Dynamic and therapeutic models for counseling the aged and their families; focus on matching interventions to lifestyles.

512: Counseling the College Student. 0-3-3. An emphasis on development in young adulthood; historical, philosophical, and practical aspects of personnel services for college students.

513: Career Information and Career/Life Style Development. 0-3-3. Provides an understanding of career development; occupational/educational information sources and systems; career and lifestyle counseling; career decision-making and instruments relevant to career planning.

514: Career Education: Vocational Guidance. 0-3-3. A course in career guidance designed to provide an overview of career development and its applications within the high school setting.

515: Career Education: Orientation of the World of Work. 0-3-3. A course in career guidance designed to provide an overview of career development and its applications within the elementary school setting.

516: An Introduction to Group Processes. 0-3-3. Preq., COUN 508. Emphasis is on providing students with a knowledge of group dynamics, and learning basic group counseling techniques under supervision.

518: Techniques of Counseling. 3-2-3. Preq., COUN 508. Provides an overview of counseling techniques and interview methods.

520: Case Studies in Counseling. 1-3 hours credit. Preq., COUN 508 and consent of instructor. Preparation and use of case studies in counseling.

521: Seminar: Current Psychological Literature. 1-3 hours credit. May be repeated. Preq., COUN 508 and consent of instructor. Students are required to do extensive reading on selected topics in psychology.

522: Field Work in Counseling. 3 hours credit (6). Preq., COUN 518 and consent of instructor. Supervised study, observation, and practice in selected employment settings.

523: Elementary School Guidance. 0-3-3. A review of the principles and organizational patterns of guidance services at the elementary school level.

525: Advanced Techniques of Counseling. 3-2-3. Preq., COUN 518 and consent of instructor. Further experiences in advanced counseling techniques appropriate to various counseling theories.

526: Problems in Guidance. 3 hours credit (6). Special conferences, workshops, and seminars as requested by elementary and secondary school personnel. May be repeated for a maximum of 6 hours credit.

527: Addiction Counseling. 0-3-3. An introduction to the field of Addiction Counseling. Emphasis is placed on recognition and identification of the addicted as well as basic treatment techniques.

528: Advanced Addiction Counseling. 3-2-3. Preq., COUN 527. A methods course intended to equip the student with a basic conception of various therapeutic modalities.

529: Cross-cultural Counseling. 0-3-3. Investigation of the development of cultural identity and techniques for appropriate interactions with clients from different cultural groups.

530: Practicum. 5-1-3. Open only by application. Supervised professional activity in the student's major field. (Minimum 3.0 GPA required)

531: Internship. 20-1-3 (6). Preq., COUN 530 or equivalent and permission of adviser. Advanced supervised counseling practice in a setting appropriate to the student's professional development.

532: School Counseling Practicum. 5-1-3. Open only by application. Supervised professional activity in a school setting. (Minimum 3.0 GPA is required)

590: Ethics and Professional Practice. 0-3-3. Preq., COUN 508. An in-depth investigation of ethical and legal issues, as well as technical concerns, related to the professional practice of counseling.

ECONOMICS (ECON)

201: Economic Principles and Problems. 0-3-3 each. A study of basic economic principles and problems, with particular reference to the operation and social implications of the American economic system. (201-Macro).

202: Economic Principles and Problems. 0-3-3 each. A study of basic economic principles and problems, with particular reference to the operation and social implications of the American economic system. (202-Micro).

215: Fundamentals of Economics. 0-3-3. (Not open to students who have had ECON 201-202.) A survey of the major principles of economics designed for the student whose curriculum requires only one quarter of economic principles.

312: Monetary Economics. 0-3-3. Preq., ECON 202 or 215. A study of the causes of changes in the supply of money and rate of spending and the effects of these changes on production, employment and the price level.

344: International Economics. 0-3-3. Preq., ECON 201 or 215 or consent of instructor. Introduction to modes of business operations and the economic factors which affect international trade. Study of principles, practices, and theory of how and why nations trade.

401: Internship in Economics I. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Economics II. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

403: Economics of Industrial Organization. 0-3-3. Preq., ECON 202 or 215. Relationships between structure, conduct and performance of industries using theoretical and empirical material: Antitrust and environmental regulation, R&D, product advertising and pricing are examined. **(G)**

406: Comparative Economic Systems. 0-3-3. Preq., ECON 202 or 215. A study of alternative economic systems such as capitalism, socialism, communism, and "mixed" in theory and practice.

408: Intermediate Economic Theory. 0-3-3. Preq., ECON 202 or 215, or consent of instructor. Microeconomics; intensive study of price, production, and distribution theories. **(G)**

409: Managerial Economic Analysis. 0-3-3. Preq., senior standing or consent of instructor. Lectures and cases emphasizing economic principles as used in managerial decision-making. Includes analysis of demand, cost and price relationships, price decision, risk and uncertainty, and capital investment. **(G)**

410: Public Finance. 0-3-3. Preq., ECON 202 or 215. An introduction to the principles and theory of financing local, state, and federal governments.

418: Labor Economics. 0-3-3. Preq., ECON 202 or 215 or consent of the instructor. Fundamentals of labor market operations, economic analysis of labor legislation; impact of American unions upon the firm's decision making and the national economy. **(G)**

437: Aggregate Economic Analysis. 0-3-3. Preq., ECON 312. Macroeconomics; intensive study of economic theory of national income analysis, interest, employment, and fiscal policy. **(G)**

510: Managerial Economics. 0-3-3. Analysis and cases; actual case studies in the application of price and distribution theory to problems of the firm.

512: Current Economic Policies. 0-3-3. An investigation of modern economic concepts in the United States through a study of policies advanced by various economic groups tending to shape economic action.

513: Macroeconomic Theory I. 0-3-3. Preq., ECON 437 or other acceptable background course(s). Analysis of monetary factors and government revenue-expenditure factors affecting the general level of prices, investment decisions, interest rates, national income and employment.

520: Advanced Microeconomic Theory. 0-3-3. Preq., ECON 408 or other acceptable course(s). Value and distribution theory emphasizing applications to business operations and public policy issues.

532: Econometric Methods. 0-3-3. Preq., QA 432 or other acceptable courses. The use of statistical techniques in economic research including estimation and interpretation of parameters of economic models.

540: Macroeconomics: Business Conditions Analysis. 0-3-3. Preq., ECON 510. Detailed review of techniques, procedures and data sources used by business economists to gather, analyze, interpret, and forecast macroeconomic variables.

541: Microeconomics: Business Conditions Analysis. 0-3-3. Preq., ECON 510. Detailed review of techniques, procedures, and data sources used by business economists to gather, analyze, interpret and forecast microeconomic variables.

542: Seminar on Business Economics Problems. 0-3-3. Preq., ECON 510 or equivalent or consent of instructor. Students will develop and present an analytical study in micro- or macroeconomics in a form expected of a business economist's presentation to corporate management.

550: Directed Study in Economics. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of economics.

613: Macroeconomic Theory I. 0-3-3. Preq., ECON 437 or other acceptable background course(s). Requires Doctoral standing. May require additional class meetings. Analysis of monetary factors and government revenue-expenditure factors affecting the general level of prices, investment decisions, interest rates, national income and employment. Credit will not be given for ECON 613 if credit is given for ECON 513.

620: Advanced Microeconomic Theory. 0-3-3. Preq., ECON 408 or other acceptable course(s). Requires Doctoral standing. May require additional class meetings. Value and distribution theory emphasizing applications to business operations and public policy issues. Credit will not be given for ECON 620 if credit is given for ECON 520.

632: Econometric Methods. 0-3-3. Preq., QA 432 or other acceptable courses. Requires Doctoral standing. May require additional class meetings. The use of statistical techniques in economic research including estimation and interpretation of parameters of economic models. Credit will not be given for ECON 632 if credit is given for ECON 532.

641: Microeconomics: Business Conditions Analysis. 0-3-3. Preq., ECON 510. Requires Doctoral standing. May require additional class meetings. Detailed review of techniques, procedures, and data sources used by business economists to gather, analyze, interpret and forecast microeconomic variables. Credit will not be given for ECON 641 if credit is given for ECON 541.

650: Directed Study in Economics. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of economics.

685: Comprehensive Exam in Economics. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in economics. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in economics. Requires consent of graduate director.

EDUCATION (EDUC)

430: Internship in Teaching. 35-0-3 (9). Preq., twelve semester hours professional education. Supervised teaching experience in area(s) of certification in education. **(G)**

431: School Readiness. 1-3-3. Preq., PSYC 204 and Upper Division standing. Designed to acquaint the student with the appropriate theory, understanding, and methods necessary for beginning school success. Particular emphasis will be on holistic developmental readiness. **(G)**

460: Methods for Teaching and Testing in ESL. 0-3-3. Preq., Senior standing. Theories and techniques for teaching English as a Second Language and evaluating student performance; emphasis on communicative competence. Also listed as ESL 460.

462: Principles and Problems of Cooperative Education. 0-3-3. Preq., Upper Division standing. The basic principles and philosophies of cooperative vocational education. History and development of cooperative education. **(G)**

463: Materials and Methods in Teaching Art. 0-3-3. Preq., EDUC 480, Upper Division standing. The planning of a course of art and the methods of presentation of such a course in the elementary and high schools. **(G)**

466: Materials and Methods of Teaching Instrumental Music. 0-3-3. Preq., EDUC 480. See EDUC 465 for description; emphasis on the instrumental aspects.

472: Individually Guided Education. 0-3-3. Presents the essential concepts principles, and skills of several individualized instruction models and teacher roles as designers, managers, and evaluators of the teaching-learning process.

501: Problems in Teaching Elementary Science. 0-3-3. A survey of research bearing on problems of organizing, developing, and evaluating the curriculum in science.

502: Problems in Teaching Language Arts in the Elementary School. 0-3-3. A study of the principles, research, methods and materials needed for teaching written and oral forms of communication in elementary and junior high schools.

503: Problems in Teaching Reading. 0-3-3. A study of problems in the teaching of reading in elementary schools. Special emphasis will be given to the development of a reading program, diagnosis, and care of individual needs of pupils, use of materials, research findings, and their applications to methods of instruction.

504: Problems in Teaching Mathematics in the Elementary School. 0-3-3. A study of the needs and problems of teachers of mathematics in the elementary school. An introduction to modern arithmetic with emphasis on newer teaching methods.

506: Improving Instruction in English. 0-3-3. A study of the methods of teaching usage and literature, analyses of curricula, selection of materials, research in recent studies in the teaching of English. Special attention will be given to planning units of work, to creative teaching and to a consideration of the needs of youth in area of reading, writing, speaking, and listening.

507: Improving Instruction in High School Mathematics. 0-3-3. The place of mathematics in general education and in specialized fields; professionalized subject matter; modern methods of teaching. Students will become familiar with teaching aids, long-unit assignments, and the construction and use of standardized and teacher-made tests.

508: Improving Instruction in Science. 0-3-3. A study of present-day trends in the teaching of science, content, organization of materials, methods of instruction, student activities, objectives, observation trips, use of textbooks, laboratory work and equipment, evaluation, preparation of unit and lesson plans, projects and student guidance.

509: Improving Instruction in the Social Studies. 0-3-3. A study of the selection and organization of subject matter in social studies, the planning of student activities, the use of instructional materials. Students will prepare unit and lesson plans utilizing community resources.

512: Philosophy of Education. 0-3-3. Designed to trace some of the more important educational problems as they have been affected by social and political facts of history, by contributions of leading educational theorists and by institutional practice.

513: Philosophy of Music Education. 0-3-3. A review of the historical development of music education in America and an analysis of trends in music education from 1930 to the present time.

514: The Learner in Adult Education. 0-3-3. The learner in adult education programs will be examined. Emphasis will be given to the teaching-learning process and the uniqueness of adult learning situations.

515: Administration and Supervision of Adult Education. 0-3-3. General administrative processes, emphasizing program planning and evaluation.

516: Seminar: Crucial Issues in Secondary Education. 0-3-3. Selected readings and research on current, crucial issues in secondary education. Topics will vary from quarter to quarter.

518: History of American Education. 0-3-3. A survey of the development and growth of elementary, secondary, and higher education with emphasis upon American education.

519: Contemporary Issues in Adult Education. 0-3-3. Investigates current problems and future trends in the broad field of lifelong learning.

520: Education for the Older Adult. 0-3-3. Designed as a study of the elderly as a unique group of learners, defining specific needs of the elderly.

521: Assessment of Students and Programs. 0-3-3. Diagnosing and evaluating students and programs within the framework of instruction; emphasis on problem solving in order to improve learning and teaching.

522: Instructional Theory and Practice. 0-3-3. Exploration and investigation of methods and paradigms of instructional theory and delivery; emphasis on creative application of instructional technology and processes that create learning opportunities.

524: Supervision of Student Teaching. 0-3-3. Designed for experienced teachers who are interested in serving as supervising teachers in teacher-education programs.

526: Curriculum Development. 0-3-3. Application of theory and research of curriculum; issues and trends in curriculum; strategies and techniques for planning curriculum; value and empirical bases for curriculum decisions.

528: Evaluating Pupil Growth. 0-3-3. Methods and procedures in test development, administration, validation, and interpretation.

529: Educational Planning and Accountability. 0-3-3. A survey of planning and accountability models in education while emphasizing the essential principles and skills necessary for designing, implementing, and evaluating education plans.

530: Internship in Teaching. 35-0-3 (9). Preq., registration by application only, requires approval of academic advisor and Director of Laboratory Experiences. Supervised teaching experience in area(s) of certification in education. (Pass/Fail)

531: Foundations of Reading. 0-3-3. An in-depth examination of the processes involved in language development from pre-reading through advanced reading skills.

532: Reading Curriculum and Materials Development. 0-3-3. Analysis of reading curriculum and development of instructional materials for various levels of reading ability.

533: Problems in Education. 1-4 hours credit (9). Preq., Consent of the instructor. An advanced course dealing with special problems in the different fields of education.

534: Diagnosis and Evaluation of Reading Difficulties. 0-3-3.Preq., EDUC 503. Causes, diagnosis, evaluation and correction of reading disabilities.

535: Clinical Reading. 7-1-3. Clinical experience in diagnosing reading problems of school children.

536: Clinical Reading. 7-1-3. Preq., EDUC 535. Practicum in remedial reading for school children.

537: Seminar, Problems in Reading. 0-3-3. Preq., consent of instructor. Recent issues, theories, studies and research findings in teaching reading.

538: Supervision and Curriculum Development in Reading. 0-3-3. Construction of an innovative curriculum in reading, plans for implementation of new curriculum, and supervision of the reading program.

539: Advanced Laboratory Practicum in Reading. 7-1-3. Supervised internship in reading.

540: Comparative Education. 0-3-3. A study of the educational systems in Europe, the Orient, and South America.

541: Introduction to Graduate Study and Research. 0-3-3. Experience is gained in the application of techniques of educational research, in writing in acceptable form, and in evaluating research. Required of all master's candidates in education and should be scheduled during the first six hours of graduate work.

542: Statistical Methods in Education. 0-3-3. A study of the statistical methods used by school personnel in the study of educational problems.

543: Adjudication of Instrumental Ensembles. 0-2-2. This course examines in detail a philosophy of the phenomenon of adjudication. It includes practical aspects of evaluation.

544: Reading in the Content Areas. 0-3-3. Provides teaching methods and research findings related to the reading process as it applies to the various content areas of the curriculum.

545: The New Media in Education. 2-2-3. A study of the uses of new technology with some practical experience in the use of these educational aids.

546: Instructional Media Design and Development. 2-2-3. An investigation of the systems approach to instructional media design, organization, and application.

551: Research and Thesis. Three hours or multiples thereof. Maximum credit allowed is six hours.

561: Research Design and Analysis. 0-3-3. Preq., EDUC 542. A study of the techniques involved in the analysis of selected experimental designs in educational research.

562: Elementary School Curriculum. 0-3-3. A study of principles of curriculum construction in the elementary school. Emphasis is upon selection, organization and evaluation of materials suitable to the elementary school.

563: Secondary School Curriculum. 0-3-3. A study of the principles of curriculum development in the secondary school.

564: The Reading Process. 0-3-3. An analysis of the physiological, psychological, and neurological foundations of the reading process.

566: Improving Instruction in Remedial Education. 2-2-3. Focuses on improvement of college level instruction at the remedial/developmental level.

567: Teaching Methods for Language Arts. 0-3-3. Provides an in-depth study of the elements of lesson planning and design with emphasis in the teaching of written and oral communication (other than reading).

568: Teaching Methods for Effective Instruction of Reading. 0-3-3. An in-depth study of reading programs and materials, diagnosis and instruction for individual needs, research findings, and their applications to methods of instruction.

569: Teaching Methods for Effective Instruction of Mathematics and Educational Technology. 0-3-3. An in-depth study of mathematics curriculum, instructional methods and materials, and research findings with an investigation of technology usage in the content fields.

570: Field Problem and Internship. 0-3-3. Preq., approval of the Dept. Head, Computer Information Systems and Analysis. The provision of supervised professional activities in business education directed by the business education faculty. Selection of one major area of business education for intensive study in terms of methods, materials, research, and curricular problems.

571: Change Theory & Innovation in Education. 0-3-3. Preq., Graduate Standing. A study of change theory and how varying factors and circumstances influence the extent of success or failure of planned innovations in public education.

572: Educational Foundations and Public Policy. 0-3-3. An analysis of the links between educational policy and school history with particular emphasis on the historical, philosophical, social, and legal foundations of education.

573: School Principles and Curriculum. 0-3-3. An analysis of the curriculum and principles of learning with additional emphasis on multicultural education, "at risk" students, and classroom management.

574: Teaching Methods for Effective Secondary School Instruction. 0-3-3. An examination of research, resources, and advanced techniques of teaching in secondary schools.

575: Practicum in Education. 10-1-3. Preq., Consent of Director of Laboratory Experiences. Structured laboratory experiences in education. (Pass-Fail)

576: Internship in Education. 9 hours credit. Advanced internship in area(s) of specialization. Minimum of 180 clock hours in direct teaching.

577: Teaching Methods for Effective Instruction of Science and Social Studies. 0-3-3. An examination of curriculum, instructional methods and materials, and research findings related to the teaching of science and social studies.

580: Specialist Research and Thesis. Three hours credit or multiples thereof. Maximum credit allowed is six hours.

589: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Education.

594: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Education.

EDUCATIONAL COMPUTER TECHNOLOGY (ECT)

445: Introduction to Technology for Teachers. 4-1-3. This course is for preservice and inservice teachers who want to develop proficiency in using technology to support classroom learning. (G)

500: Technology Leadership to Support Standards-Based Teaching & Learning. 4-1-3. Preq., ECT 445 or equivalent. Exploration of ways to use technology to support standards-based teaching and learning in the classroom.

501: Educational Telecommunications, Networks, & the Internet. 4-1-3. Preq., ECT 500 or equivalent. Examination of methods and resources for intergrating the Internet into content area learning.

502: Design & Development of Multimedia Instructional Units. 4-1-3. Preq., ECT 500 and 501. Design and development of multimedia products to facilitate student learning.

510: Technology for Teaching Reading/Language Arts. 4-1-3. Preq., ECT 445 or equivalent. Exploration of a variety of technology to support reading/language arts instruction. Includes the design and development of multimedia products.

EDUCATION CURRICULUM AND INSTRUCTION (EDCI)

100: Early Experiences in Education. 0-1-1. Designed to give high school seniors an overview of the teaching profession from the perspectives of Teacher Education, Health and Physical Education, and Special Education.

102: Reading Skills for College Freshmen. 9-0-3 (9). The course provides individually prescribed instruction in reading skills for college freshmen. The course objective is to help alleviate reading deficiencies, which inhibit effective learning. Non-degree credit.

125: Introduction to Teaching. 1-1-1. An overview of the teaching profession from various perspectives supplemented with structured observations in elementary, middle, and secondary classrooms.

189: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Education. May be repeated for credit.

194: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Education. May be repeated for credit.

205: The Computer: A Tool for the Teacher. 0-1-1. Instructional, utility, and management software applications for school use. Development of instructional materials, incorporation of commercially available software into lesson and unit structure.

245: Microcomputer Applications: Tools for Lifelong Learning. 0-3-3. Designed to introduce students to the microcomputer and a variety of software applications that may be useful for study, research, and educational preparation.

289: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Education. May be repeated for credit.

294: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Education. May be repeated for credit.

300: Driver Education and Highway Safety. 0-3-3. Investigation of the problems facing drivers, traffic design problems, and the study of the philosophy of driver education.

310: Instructional Technology. 1-3-3. Introduction to instructional media for the classroom. Students evaluate and use computer software and other audio-visual media to develop and support classroom instruction.

320: Materials and Methods for Elementary Science and Social Studies. 0-3-3. Preq., PSYC 204. A course for the study of curriculum, organization and teaching in elementary science and elementary social studies.

351: Materials and Methods in Teaching Modern Language. 0-3-3. Preq., 12 hours of modern languages and EDUC 480. The student will be introduced to the latest techniques of organizing materials and presenting them to high school pupils.

389: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Education. May be repeated for credit.

394: Special Topics. 1-4 hours credit. Selected topics in an identified area of study. May be repeated for credit.

401: Directed Observation and Pre Student Teaching Experiences. 3 3/4-1-1. Preq., 90 semester hours including professional preparation courses and taken in quarter prior to student teaching. Directed observation, participation, and critique related to the field in which the student plans to student teach.

402: Measurement in Education. 0-2-2. Includes principles of measurement and evaluation, construction of teacher-made tests, and utilization of standardized tests.

403: Materials and Methods of Teaching Reading. 0-3-3. Preq., EDUC 480. Instructional techniques designed to assist the secondary teacher in implementing reading strategies in content courses.

404: Reading Strategies for Secondary School Teachers. 0-3-3. Instructional techniques designed to assist the secondary teacher in implementing reading strategies in content courses.

405: Materials and Methods in Teaching Agricultural Education. 0-3-3. Preq., AGED 460 or consent of instructor. Techniques, requirements, and organization of state curriculum guides and course requirements in agricultural education in public schools. Requirements of the FFA advisor/agriculture teacher. **(G)**

406: Education Innovations in the Current and Emerging Schools. 0-3-3. Study of educational innovations and their implications.

409: Materials and Methods in Teaching Business Education. 0-3-3. Preq., Upper Division and ACCT 202. A course designed to acquaint the student with the best practices in teaching business subjects. **(G)**

410: Business and Office Operations. 0-3-3. Methods and procedures in developing and coordinating a cooperative office education program in the secondary school. **(G)**

415: Multicultural Education. 0-3-3. Preq., Upper Division and PSYC 204. This course provides K-12 education students with the culturally inclusive awareness, skills, and knowledge to meet the diverse needs of learners. **(G)**

416: Student Teaching. 6-9 hours credit. Meet all qualifications identified in this catalog for teaching level or area of specialization. Student receives appropriate supervised experiences. Total clock hours determined by program. Two hours of seminar. (Pass-Fail).

417: Diagnosis and Correction of Reading Difficulties. 11/4-2-3. Preq., Upper Division, EDUC 424, and PSYC 204. Field-based experience in diagnosing reading problems and recommending appropriate instructional interventions for school children. **(G)**

420: Practica in Education. 10-1-3. Preq., Consent of Director of Laboratory Experience. Structured laboratory experiences in area(s) of specialization in education. May be repeated for credit. (Pass/Fail)

422: Materials and Methods for Elementary/Middle Mathematics. 0-3-3. Preq., Upper Division and PSYC 204. An examination of the characteristics and objectives of the modern elementary mathematics program combined with experiences in content, methods, and organizations. **(G)**

423: Materials and Methods for Elementary/Middle Language Arts. 0-3-3. Preq., Upper Division and PSYC 204, concurrent enrollment required with EDUC 424. A course to enable students to use current principles, research, methods and materials to teach oral, written and reading communication skills. **(G)**

424: Materials and Methods for Elementary/Middle Reading. 0-3-3. Preq., Upper Division, Reading Methods, and PSYC 204, concurrent enrollment required with EDUC 423. Principles, methods, and research pertaining to the teaching of reading will be emphasized. **(G)**

425: Materials and Methods for Elementary/Middle Science. 0-3-3. Preq., Upper Division and PSYC 204. A course for the study of curriculum, organization, and teaching of elementary/middle science. **(G)**

426: Materials and Methods for Elementary/Middle Social Studies. 0-3-3. Preq., Upper Division and PSYC 204. A course for the study of curriculum, organization, and teaching elementary/middle social studies. **(G)**

431: Literacy for Emergent Learners. 2-1-3. Preq., Upper Division. Designed to acquaint students with appropriate theory, understanding, and methods necessary for the emergent learner with emphasis on holistic aspects of effective instruction. **(G)**

432: Kindergarten Education. 1-3-3. Preq., PSYC 204 and Upper Division standing.. Course will involve curriculum planning based on principles of child development. Students will become familiar with the curriculum development process by using curriculum documents including instructional units. **(G)**

433: Special Problems in School Curriculum. 1-4 hours credit. (9). Preq., consent of instructor. Course is designed to deal with selected problems in elementary and secondary schools.

434: Diverse Learners. 2-1-3. Preq., Upper Division. This course provides P-12 teaching candidates with the awareness, knowledge, skill, and disposition to identify, assess, teach, accommodate, and manage the instructional needs of diverse learners. **(G)**

435: Trends and Issues in Education. 2-1-3. Preq., Upper Division. This course provides PK-12 teacher candidates with the awareness, knowledge, skill, and disposition to identify, assess, teach, and accommodate the changing needs of all learners. **(G)**

436: Braille I. 1-3-3. Preq., Upper Division or consent of instructor. Students develop proficiency in reading and writing the Braille literary code while developing an understanding of which visually impaired children benefit from Braille reading instruction. **(G)**

437: Reading/Language Arts Methods. 2-1-3. Preq., Upper Division. Principles, methods, and research pertaining to the teaching of reading and language arts will be emphasized. **(G)**

438: Instructional Design, Strategies, and Assessment. 2-1-3. Preq., Upper Division. This course will be a generic methods course which explores methods and procedures to assess and facilitate student academic growth. **(G)**

441: Methods of Teaching Kindergarten Children. 1-3-3 Preq., LSCI 201, EDUC 432, PSYC 408, and Upper Division standing.. Practical problems in the selection and organization of the curriculum to promote children's learning. Emphasis on planning, selecting equipment, teaching aids, and teaching procedure. **(G)**

445: Using the Microcomputer in the Classroom. 0-3-3. Operating and using microcomputers for classroom instruction. Computer literacy concepts, and software evaluation are included. **(G)**

447: Software Application, Teaching Methods, and Intermediate Programming for Teachers. 0-3-3. Preq., a course in BASIC programming. Computer-assisted instructional software, authoring packages, LOGO, and intermediate programming skills for classroom instruction. **(G)**

448: Instructional Software Design and Development. 0-3-3. Preq., A course in BASIC programming. Methods for teaching computer-related topics and programming techniques for designing instructional modules. **(G)**

449: Administrative Applications of the Microcomputer in Schools. 0-3-3. A course to provide information concerning the administrative users of computers in schools, hardware/software/consultant resources, and methods for developing effective in-service programs. **(G)**

450: Improving Instruction in Art. 0-3-3. Identification of problems of teaching art. Emphasis upon philosophy, art materials and techniques, evaluation and curriculum planning.

451: Software Applications in the Teaching of Reading. 1-3 hours credit. (3). The microcomputer is used to prepare software for use in content reading applications and test construction. **(G)**

452: Administration of Instructional Materials Centers. 0-3-3. Techniques organization, management and selection of printed and non-book materials in multi-media instructional materials centers.

453: Foreign Language Teaching Methods. 0-3-3. Preq., 12 hours of a foreign language. Study of a broad range of foreign language teaching methods; examination of underlying theories and practical applications. Also listed as FLNG 453. **(G)**

454: English Grammar in ESL Teaching. 0-3-3. Preq., Senior standing. An analysis of English grammar specifically for developing instructional techniques used in teaching grammar for communicative competence in ESL. Also listed as ESL 454.

455: Improving Instruction in the Middle Grades. 0-3-3. A study of the history, philosophy, and nature of the middle school with emphasis on early adolescent physical and educational development and social/emotional problems.

456: Materials and Methods in Teaching Mathematics. 0-3-3. Preq., EDUC 480 and MATH 241, Upper Division standing. The nature of mathematics and methods of teaching. Special emphasis will be placed on the interpretation and solving of reading problems. **(G)**

457: Materials and Methods in Teaching English. 0-3-3. Preq., EDUC 480, Upper Division standing. The student will be introduced to the best techniques of organizing and presenting English material. **(G)**

458: Materials and Methods in Speech, Language and Hearing in the Public Schools. 0-3-3. Practical problems in the identification, diagnosis, and treatment of communication disorders in school children,

with emphasis on materials, organization of therapy program and teaching procedures. (G)

459: Materials and Methods in Teaching Social Studies. 0-3-3. Preq., EDUC 480, Upper Division standing. An examination of the character and purpose of social studies is followed by presentation of appropriate teaching suggestions. (G)

460: Internship in Teaching. 35-0-1. Preq., Upper Division and permission of Director of Professional Experiences (Pass/Fail). Teacher candidates meet the student teaching requirement while employed in a teaching position. Supervision by the school principal and university supervisor are required. (G)

461: Performance Based Seminar I. 0-2-2. Preq., concurrent enrollment in EDCI 460. Teacher candidates will meet weekly to address topics responding to observed needs of candidates. (G)

462: Performance Based Seminar II. 0-2-2. Preq., concurrent enrollment in EDCI 460. Teacher candidates will meet weekly to address topics responding to observed needs of candidates. (G)

463: Performance Based Seminar III. 0-2-2. Preq., concurrent enrollment in EDCI 460. Teacher candidates will meet weekly to address topics responding to observed needs of candidates. (G)

464: Materials and Methods in Teaching Science. 0-3-3. Preq., EDUC 480, Upper Division standing. A careful examination of the most advanced methods of organizing the presenting materials in sciences for the secondary school. (G)

465: Materials and Methods of Teaching Vocal Music. 0-3-3. Examines problems which confront the teacher and supervisor of vocal music; e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing.

466: Adaptive Technology for the Visually Impaired. 1-1-1. Preq., Upper Division or consent of instructor. Through demonstrations, hands-on projects, and various guest lectures, student learn to use state of the art technology designed for the blind and/or visually impaired learner. (G)

467: Materials and Methods in Teaching Speech. 0-3-3. Preq., EDUC 480, Upper Division standing. An examination of materials and methods for teaching speech in elementary and secondary schools. (G)

470: Curriculum Development and Design for ESL. 0-3-3. Preq., Senior standing. Selection of objectives, content, task implementation, and pedagogy for teachers of English as a Second Language. Also listed as ESL 470.

471: Classroom Management. 1-3-3. Course emphasizes the application of concepts, principles, and skills necessary for designing, implementing, evaluating, and revising plans for classroom management. (G)

472: Transition and Vocational Procedures. 2-1-3. Preq., Upper Division. Emphasizes transition and vocational models, curricula, strategies, and services. Field-based experiences focus on career exploration, planning, inter-agency collaboration, research, and family involvement. (G)

473: Educational Strategies and Methods for Students with Mild/Moderate Disabilities. 2-1-3. Preq., Upper Division. Procedures, methods, materials, and research-based strategies for students with disabilities (1-12) with emphasis on accommodations, modifications, and Individualized Education Programs (I.E.P.s). (G)

475: Foundations of Education. 0-2-2. An interdisciplinary survey of the development of educational institutions and practices with particular focus upon the influences of social, legal, historical and philosophical thought. (G)

477: Teaching Methods for Effective Instruction of Science and Social Studies. 2-1-3. Preq., Upper Division and PSYC 204. A course for the study of curriculum organization, instructional strategies and materials, and research findings related to PK-8 science and social studies. (G)

480: Principles of Teaching. 0-3-3. An investigation of the principles of teaching as related to the student, curriculum, and the teaching-learning process. (G)

489: Special Topics. 1-4 hours credit (9). Selected topics in an identified area of study in the College of Education. May be repeated for credit. (G)

490: Introduction to Adult Education. 0-3-3. A study of the history, philosophy, objectives and nature of adult and continuing education; emphasis given to the adult as a learner. (G)

491: Reading in Adult Education. 0-3-3. Examines the characteristics of the functionally illiterate adult. (G)

492: Materials and Methods in Adult Education. 0-3-3. Examination of characteristics unique to the adult with emphasis on analysis of the methods and materials available for working with adults. (G)

493: Cross-Cultural Communication for ESL Teaching. 0-3-3. Preq., Senior standing. Concepts of culture and the relationship of language acquisition to the cultural setting with specific application to the teaching of ESL. Also listed as ESL 493.

494: Special Topics. 1-4 hours credit (9). Selected topics in an identified area of study in the College of Education. May be repeated for credit. (G)

495: Social and Psychological Aspects of Blindness. 1-2-3. Preq., Upper Division or consent of instructor. Course explores social and psychological implications of blindness and provides an overview of current and historical practices in the rehabilitation and education of blind individuals. (G)

499: Instructional Strategies and Materials for Teaching Blind Students. 0-3-3. Preq., Upper Division or consent of instructor. Methods and materials for teachers teaching blind children to read. Students will increase personal Braille reading speed, proficiency, and knowledge of the literary Braille code. (G)

EDUCATION LEADERSHIP (EDLE)

527: Public School Organization and Administration. 0-3-3. Introduction to national, state, and local administration; public school finance; principles and practices of administration; administration of special services; national and state legal aspects of public school administration, and administration of school-community relations.

550: Supervision of Child Welfare & Attendance. 0-3-3. Preq., Graduate status. Principles and practices of census, child welfare, and attendance for the supervisor of child welfare and attendance or visiting teacher.

552: Supervision of Instruction in Elementary and Secondary Schools. 0-3-3. A course designed to aid prospective elementary and secondary administrators in theories, principles, and concepts of supervision.

555: School and Community Relations. 0-3-3. Principles of school relations applied to education and the development of school and community understandings.

556: School Law. 0-3-3. State and national aspects and implications of public school law. Special attention is given to cases in both state and federal courts.

557: Elementary School Principalship. 0-3-3. Duties and responsibilities in organization, leadership, administration and supervision in the elementary school.

558: Secondary School Principalship. 0-3-3. Duties and responsibilities in organization, leadership and administration of the secondary school.

559: School Finance. 0-3-3. An in-depth survey into the financial and business management in public education.

560: School Personnel Administration. 0-3-3. A course to equip the new principal to administrate all school personnel.

565: Differentiated Supervision. 0-3-3. Focuses on improvement of classroom instruction through the building of the relationship between supervision and teaching.

EDUCATIONAL PSYCHOLOGY (EPSY)

472: Vocational Procedures and Practices for Exceptional Students. 0-3-3. Experience-based vocational education; process-oriented curriculum development; planned learning activities; formal assessment procedures; utilization of community resources; occupational preparation; review of exemplary programs. (G)

475: Advanced Procedures in Special Education. 0-3-3. Preq., approval of instructor. Individually supervised and systematically organized observation and participation in evaluative and educational procedures with exceptional students. (G)

480: Introduction to Orientation and Mobility. 0-3-3. Provides an examination and application of the fundamental principles and theories of orientation & mobility. Students will progress through a graduated travel curriculum. (G)

502: Psychosocial and Educational Appraisal of Exceptional Students. 7-1-3. Preq., approval of instructor. Administration and interpretation of specialized individual tests, infant development scales, non-verbal tests for linguistically impaired, verbal tests for sensory handicaps, and accelerated academic assessment.

504: Human Exceptionalities Seminar. 0-3-3. An overview of special education emphasizing social, physical, emotional, and educational components of exceptional students including history and current legislation.

511: Advanced Educational Psychology. 0-3-3. An in-depth study of the major theories of learning with an emphasis on reviewing contemporary research relating to human learning and the application of psychological principles to instructional technology.

512: Consulting Strategies for Assessment Teachers. 0-3-3. Preq., SPED 490. Development of teacher and parent consultation skills, coordination and interaction of the education assessment teacher with classroom programs, and available community resources.

515: Gifted/Talented Individuals. 0-3-3. The nature and needs of exceptionally able students with emphasis on curriculum adjustment and research in the field.

516: Gifted/Talented Psychoeducational Materials and Methods. 0-3-3. Preq., consent of area coordinator. Process of materials utilization and development for teacher of gifted/talented students, including procedures for implementing creativity, problem solving activities, and higher levels of cognition.

550: Field Work in Human Exceptionalities. 12-0-3 (6). Internship in the application of principles of learning and child development from a behavioral approach to the educational needs of exceptional students.

561: Diagnostic/Prescriptive Psychoeducational Strategies and Materials for Exceptional Students. 0-3-3. Individualized interfacing of learning characteristics of exceptional students with curriculum requirements and environmental structure; emphasis on individualized prescriptive strategies and programs.

581: Blindness Rehabilitation Systems and Issues. 0-3-3. Presents an overview of rehabilitation history, concepts, programs and services; professional responsibilities and ethics with field experience utilizing techniques for working with rehabilitation agencies, school systems, organizations and public or private programs serving blind and visually impaired individuals.

583: Advanced Orientation & Mobility. 0-3-3. Provides instruction for teaching techniques of independent mobility to individuals who are blind/visually impaired. Curriculum includes strategies and techniques for rural environments, special travel situations, and use of public transportation and applications to daily living vocational environments. Special techniques used by O&M instructors who are blind/visually impaired are emphasized.

584: Internship in Orientation & Mobility. 0-3-3 (6). Preq., enrollment in Educational Psychology (Visual Impairments - Orientation & Mobility) program and EPSY 583. Intensive experience in teaching Orientation and Mobility skills to visually impaired students. Field experience at the Louisiana Center for the Blind, Ruston, LA. (Pass/Fail)

599: Master's Thesis. 0-3-3. (6 hours minimum). Original research conducted under the supervision of a departmental faculty member in the student's program area. Student must be enrolled whenever university facilities or faculty are used. (Pass/Fail).

ELECTRICAL ENGINEERING TECHNOLOGY (ELET)

100: Introduction to Electrical Engineering Technology. 3-0-1. A survey of topics to introduce the student to the profession, the department and the curricula.

160: Basic Electricity. 0-3-3. An introduction to the fundamental concepts of electricity.

161: Basic Electricity Lab. 3-0-1. Coreq., ELET 160. Practical laboratory exercises to illustrate the material in ELET 160.

170: Basic Circuit Theory. 0-3-3. Preq., Concurrent registration in ELET 171 and MATH 111. Introduction to DC circuit theory; loop equations, node equations and major network theorems. Single time constant transients.

171: Basic Circuit Lab. 3-0-1. Concurrent registration in ELET 170. Laboratory companion to ELET 170.

180: AC Circuits. 0-3-3. Preq., ELET 170, Coreq., MATH 112. Concurrent registration in ELET 181. An extension of the concepts developed in ELET 170, to include alternating current circuits for sinusoidal steady-state analysis.

181: AC Circuits Laboratory. 3-0-1. Concurrent registration in ELET 180. Laboratory companion to ELET 180.

196: AC & DC Analysis. 0-2-2. Preq., MATH 111, 112, and some experience with AC and DC Circuits. Mathematical principles with underlie circuit analysis. Mesh and nodal analysis, network theorems, Kirchoff's laws, Thevenin's and Norton's equivalents for both AC and DC circuits.

197: Electronic Analysis. 0-3-3. Preq., ELET 180, and some experience with electronic circuits transistors and operational amplifiers. Mathematical principles which underlie electronic analysis. Amplifiers and feedback circuits.

198: Instrumentation. 0-2-2. Preq., ELET 180 or 196, and some experience with instrumentation circuits. Mathematical principles which instrumentation.

260: Electronics. 0-3-3. Preq., ELET 180. Concurrent registration in ELET 261. An introductory treatment of solid state devices, concentrating on the ordinary diode and the bipolar and field effect transistors.

261: Electronics Laboratory. 3-0-1. Preq., Concurrent registration in ELET 260. Introductory electronics laboratory, a companion to ELET 260.

270: Instrumentation. 0-3-3. Preq., ELET 180 or consent of the instructor. Basic measuring devices, meters, bridges, etc. An introduction to the methods used in making accurate measurements.

271: Instrumentation Laboratory. 3-0-1. Preq., Concurrent registration in ELET 270. Laboratory for the study of electrical and electronic controlled instrumentation.

272: Electronics Applications. 0-3-3. Preq., ELET 260. Concurrent registration in ELET 273. Continuation of ELET 260. The study of semiconductor devices imbedded in passive RLC networks, and their applications in practical situations.

273: Electronics Applications Laboratory. 3-0-1. Concurrent registration in ELET 272. Training in the construction and troubleshooting of solid state electronics circuits.

274: Computer Programming. 0-1-1. The logic of computer solutions to problems. Basic programming utilizing a higher level programming language. Applications of computer usage in Electrical Engineering Technology. Also listed as ELEN 243.

275: Computer Programming. 0-1-1. Preq., ELET 274. A continuation of ELET 274. Applications of computer usage in Electrical Engineering Technology.

280: Electrical Power. 0-3-3. Preq., ELET 180. A survey of the power field; the aims, problems and techniques. Future trends.

284: Computers. 0-3-3. Preq., ELET 260. Concurrent registration in ELET 285. Digital and analog computer systems, circuits, and maintenance.

285: Computers Laboratory. 3-0-1. Preq., Concurrent registration in ELET 284. Practical laboratory exercises in computer circuitry and maintenance techniques.

360: Electrical Power. 0-3-3. Preq., ELET 180 and 270. Concurrent registration in ELET 361. Study of techniques and solution to fundamental problems in the electric power industry. Emphasis on practical applications.

361: Electrical Power Laboratory. 3-0-1. Concurrent registration in ELET 360. Companion laboratory to 360.

370: Integrated Circuits. 0-3-3. Preq., ELET 260. Concurrent registration in ELET 371. Applications of integrated circuits, both linear and discrete, in a variety of amplifiers, switching circuits and functional operations.

371: Integrated Circuits Laboratory. 3-0-1. Concurrent registration in ELET 370. Practical laboratory work in the utilization of integrated circuits in active networks, both linear and discrete.

382: Computer Servicing. 0-2-2. Preq., ELET 284. Techniques of fault isolation and repair of digital and analog computers. Preventive maintenance techniques. The theory of maintainability.

383: Computer Servicing Laboratory. 3-0-1. Coreq., ELET 382. Practical troubleshooting of computer systems.

390: Electrical Drafting. 0-3-3. A course in mechanical drafting with emphasis on schematic diagrams, wiring diagrams, circuit boards, and electrical standards and codes.

460: Communication Circuits. 0-3-3 Preq., ELET 260. Concurrent registration in ELET 461. The study of circuits used in AM and FM radio, television, and digital data transmission.

461: Communication Circuits Laboratory. 3-0-1. Concurrent registration in ELET 460. Companion laboratory to lecture ELET 460. Construction of RF amplifiers, modulators, etc.

465: Circuit Design and Fabrication. 3-1-2. Preq., ELET 370 and ELET 390. A student project course in design, layout and fabrication of printed circuits.

468: Electronic Motor Control. 0-3-3. Preq., ELET 260, 360. Concurrent registration in ELET 469. Application of solid-state devices to the control of power in static and dynamic energy conversion systems. Methods of control in DC and AC systems.

469: Electronic Motor Control Laboratory. 3-0-1. Preq., Concurrent registration in ELET 468. Companion laboratory to ELET 468.

470: Control Systems. 0-3-3. Preq., ELET 260. Concurrent registration in ELET 471. Introductory control systems. A survey of the field, with emphasis on the problems, current solutions, and analytical methods.

471: Control Systems Laboratory. 3-0-1. Concurrent registration in ELET 470. Field trips and laboratory experiments in principles of automatic control systems.

472: Seminar. 0-1-1. Preq., senior standing. Discussion of employment, current job market, preparation of personal data sheets, application forms, other placement activities.

480: Electronic Computers. 0-3-3. Preq., ELET 284. Concurrent registration in ELET 481. Organization, operation, and programming of digital computers on a more advanced level. Basic numerical techniques.

481: Electronic Computers Laboratory. 3-0-1. Concurrent registration in ELET 480. A workshop in computer methods intended to provide applications of the theory in ELET 480 lecture.

490: Special Problems. 1-4-(9) hours credit. Preq., consent of instructor. A course to be arranged for the purpose of covering a selected topic of current importance or special interest.

ELECTRICAL ENGINEERING (ELEN)

223: Electrical Circuits II. 3-2-3. Preq., ELEN 221 or ELEN 326 and credit or registration in MATH 242. Transient analysis of source-free and high order systems, complex frequency, and resonance phenomena. Computer solution of circuits. Electrical instruments, devices, and design for measurements in electrical networks.

232: Introduction to Digital Design. 0-2-2. Introduction to digital design techniques, Boolean algebra, combinational logic, minimization techniques, simple arithmetic circuits, programmable logic, sequential circuit design, registers and counters.

241: Introduction to Microcomputers. 0-3-3. Introduction to computer organization and operation, data representation and manipulation, assembly language programming, register level operations, peripheral device interfaces.

242: Introduction to Microprocessors. 3-2-3. Preq., ELEN 232. Introduction to microprocessor organization and operation, data manipulation, assembly language programming, register level operations, and device interfacing.

243: Computer Programming. 0-1-1. The logic of computer solutions to problems. Basic programming utilizing a higher level programming language. Applications of computer usage in Electrical Engineering. Also listed as ELET 274.

311: Introduction to Electric & Magnetic Fields. 0-2-2. Preq., PHYS 202. Vector analysis. Energy and potential. Static magnetic fields. Magnetic circuits and inductance.

321: Linear Systems. 0-3-3. Preq., ELEN 222 and credit or registration in MATH 245. Fourier Series. Fourier Transform. Laplace Transform. Convolution and the system function. Filters. State variable representation and solution.

326: Theory and Applications of Electrical Engineering. 0-3-3. Preq., MATH 242 (this course for non-Electrical Engineering majors). Solutions of circuits and networks. Magnetic circuits and devices. Applications to transformers connections, motors, and systems. Power distribution and electrical safety.

334: Solid State Electronics. 0-3-3. Preq., MATH 244, and PHYS 202. Fundamentals of solid state electronic materials and devices, emphasizing semiconductors and principles of operation of ULSI devices.

335: Analog Electronics. 3-2-3. Preq., ENGR 221. Diode and transistor characteristics and models. Design of power supplies, single- and multiple-stage amplifiers. Design and application of operational amplifiers.

381: Electrical Machinery. 0-3-3. Preq., ELEN 311. Electromagnetic energy storage and conversion. Principles of electromechanical energy conversion. Power transformers. Design of electromechanical devices. Analysis of rotating machines.

386: Electrical Equipment for Buildings. 0-3-3. Preq., MATH 220 and PHYS 210. Not available for electrical engineering majors. A study of the problems of the design and application of electrical wiring and lighting systems for building.

402: Electrical Design. 3 hours credit. Preq., written consent of supervising instructor. Closely supervised design of electrical engineering problem. Opportunity for individual investigation, design, and fabrication of electrical apparatus.

403: Electrical Design. 1 hour credit. Preq., Written consent of supervising instructor. Closely supervised design of electrical engineering problem. Opportunity for individual investigation, design and construction of electrical apparatus or system.

404: Electrical Design. 2 hours credit, Preq., written consent of supervising instructor. Closely supervised design of electrical engineering problem. Opportunity for individual investigation, design, and construction of an electrical apparatus or system.

406: Electrical Engineering Design I. 3-1-2. Preq., ELEN 331, 339, 389 and senior standing. Design problems requiring the integration of circuits, electronics, field theory, controls, energy conversion, power systems, and economics.

407: Electrical Engineering Design II. 3-0-1. Preq., ELEN 406. A laboratory for the continuing development of the senior design project started in ELEN 406.

408: Electrical Engineering Design III. 3-0-1. Preq., ELEN 407. A laboratory for the continuing development and implementation of the senior design project started in ELEN 406 and continued in ELEN 407.

411: Electric and Magnetic Fields. 0-3-3. Preq., ELEN 311, and MATH 244. Capacitance. LaPlace's Equation. Maxwell's equations. Time-varying electromagnetic fields. Plane waves. Transmission lines. Design of impedance-matching devices. **(G)**

412: Signal Transmission. 0-3-3. Preq., ELEN 411. Transmission lines and distributed parameters. Wave-guides, traveling electromagnetic wave analysis, and boundary valve problems. Impedance matching, graphical solutions, and microwave networks. Laboratory applications and design. **(G)**

422: Introduction to Discrete Time Systems. 0-3-3. Preq., ELEN 321 or permission of instructor. Discrete signals, LTI systems, discrete Fourier analysis, discrete filters, sampling, Z-transforms. **(G)**

435: Electronics. 0-3-3. Preq., ELEN 335. Feedback amplifiers, integrated circuit analysis, operational amplifier applications in the areas of nonlinear circuits, active filters, switching circuits, controls, and communications. **(G)**

437: Microfabrication Principles. 0-3-3. Preq., MATH 244, and PHYS 202. Fundamentals of microfabrication processes necessary for the realization of ULSI and other technologies. **(G)**

438: Microelectronic Applications & Device Fabrication. 3-2-3. Microfabrication process integration and applications to the realization of ULSI and other technologies. **(G)**

441: Computer Systems Interfacing. 3-2-3. Preq., consent of instructor. Topics useful in integrating multi-component systems of manufacturing with computer-based monitoring, control and communication. **(G)**

450: Selected Topics. 0-2-2. Preq., permission of instructor. Work in an area of recent progress in electrical engineering of immediate interest or need. Topic selected will vary from term to term.

451: Special Topics. 0-3-3. Preq., consent of instructor. Study in an area of recent progress in electrical engineering of immediate interest or need. Topic selected will vary from term to term. **(G)**

461: Communication Systems. 0-3-3. Preq., ELEN 321 and 335. Evaluation and design of communication systems utilizing Fourier and random-signal analysis. Amplitude, frequency, pulse, pulse-code modulation and demodulation. Multiplexing. **(G)**

462: Digital Communication Systems. 0-3-3. Preq., ELEN 461 or consent of instructor. Analysis and design of digital communication systems. Signals and spectra. Digital base band and carrier systems,. digital networks, introduction to emerging technologies. **(G)**

463: Optical Communication Systems. 0-3-3. Preq., ELEN 411. Optical waveguides, mode theory and ray optics. Transmission losses and signal distortion. Optical sources, detectors and transmission link analysis.

469: Communications Laboratory. 3-0-1. Coreq., ELEN 461. Communications laboratory to accompany ELEN 461. Fourier Spectrum, AM systems, FM systems, and Time Division Multiplex.

471: Automatic Control Systems. 0-3-3. Preq., ELEN 321, MATH 244. Analysis and design of linear feedback systems. Mathematical modeling. Transfer functions and signal-flow graphs. State variable analysis. Time domain analysis and design of linear control systems. Frequency domain analysis and design of linear control systems. **(G)**

472: Introduction to Digital Control. 0-3-3. Preq., ELEN 321, 471 or consent of instructor. An introduction to the theory of linear discrete control systems. Time-domain analysis of discrete systems. Z-transform. Sampling. Discrete-time signal analysis. Sampled data control systems. **(G)**

479: Automatic Control Systems Laboratory. 3-0-1. Credit or registration in ELEN 471. Laboratory design, simulation and testing of automatic control systems. **(G)**

481: Power Systems. 0-3-3. Preq., ELEN 381 or consent of instructor. Per-unit notation. The design and analysis of balanced power systems including load flow, economic dispatch, short circuit and over current device coordination and control of watts and vars. **(G)**

482: Power Systems Design and Analysis. 0-3-3. Preq., ELEN 481 or consent of instructor. Review of three-phase short circuits. Symmetrical

components. Analysis of power systems in the transient state. Control of frequency and power flow in interconnected systems. (G)

483: Motor Control. 0-3-3. Preq., ELEN 481. Speed control. Reduced voltage starting techniques. Classical relay ladder logic. Modern programmable logic control device applications. Power electronic applications. (G)

489: Electrical Energy Conversion Laboratory. 3-0-1. Preq., ELEN 381; Coreq., registration in ELEN 481. Laboratory design and testing of basic electromechanical devices and machines.

491: Machine Vision. 3-2-3. Preq., Senior or Graduate status and permission of instructor. Machine Vision systems applied to Manufacturing. Content includes lighting, optics, vision hardware and software. (G)

512: Electromagnetic Waves. 0-3-3. Preq., ELEN 411 or permission of instructor. Propagation, reflection and refraction of electromagnetic waves. Guided waves and power flow. Boundary-value problems.

513: Antennas and Radiation. 0-3-3. Preq., ELEN 512 or permission of instructor. Channel effects and types of propagation. Theory and practice in antenna design.

533: Optoelectronics. 0-3-3. Preq., Permission of instructor. Modulation of light, display devices, lasers, photodetectors, optical transistors, logic gates, Waveguides, transmitter and receiver design.

535: Advanced Topics in Microelectronics. 0-3-3 (6). Preq., consent of instructor. May be repeated with change in subject matter. Selected topics of current research interest in the field of microelectronics.

537: Advanced Microfabrication with Computer-Aided Design. 0-3-3. Preq., ELEN 438 or consent of instructor. Advanced microfabrication process development and integration with the aid of computer process modeling and simulation.

538: Advanced Microelectronic Devices with Computer-Aided Design. 0-3-3. Preq., ELEN 537 or consent of instructor. Principles of operation and analysis of advanced microelectronic devices with the aid of computer device modeling and simulation.

543: Microcomputer Design. 0-3-3. Preq., ELEN 331 and 442 or consent of instructor. Study of microcomputer design. Microcomputer Development System and Logic Analyzer. Design of control processors.

545: Computer Architecture. 0-3-3. Preq., CME 460 or graduate standing. An introduction to current machine architectures. Topics include memory design, pipeline processing, vector machines, multiprocessor architectures and parallel algorithm design techniques and evaluation methods.

550: Special Problems. 1-4 semester hours. Advanced problems in electrical engineering. The problems and projects will be treated by current methods used in professional practice.

551: Research and Thesis in Electrical Engineering. Registration in any quarter may be for three semester hours credit of multiples thereof. Maximum credit allowed is six semester hours.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem; technical literature survey required; development of engineering research techniques.

557: Special Topics: Electrical Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of electrical engineering. May be repeated as topics change.

561: Random Signals and Systems. 0-3-3. Preq., ELEN 461 and 471 or permission of instructor. Random signal analysis. Correlation and power spectrum analysis. Stochastic communication and control systems.

565: Digital Signal Processing. 0-3-3. Preq., ELEN 461 or permission of instructor. Review of discrete linear signals and systems theory. Design/Implementation of FIR and IIR digital filters. Quantization and finite word length effects. Spectrum estimation.

566: Estimation Theory. 0-3-3. Preq., ELEN 561 or permission of instructor. Estimation, based on noise-corrupted observations, of unknown system states. Maximum-likelihood and least square estimation; matched filters. Wiener and Kalman filtering.

572: Digital Control Systems I. 0-3-3. Preq., ELEN 471 or permission of instructor. Sampling Theory. Date reconstruction. Z-transforms. Stability analysis. Time-domain analysis. Frequency domain analysis. Introduction to Digital Control Systems.

573: Digital Control Systems II. 0-3-3. Preq., ELEN 572 or permission of instructor. Review of Z-transforms. State variable techniques. Controllability and observability. Design of digital control systems with state variable techniques. Digital state observer. Microprocessor control.

581: Computer Applications to Power Systems. 0-3-3. Preq., ELEN 481 or permission of instructor. The study of algorithms for power network matrices, three-phase networks, fault, load flow and stability problems solution by computer methods.

582: Motor Control and Power Electronics. 0-3-3. Preq., ELEN 381 or permission of instructor. Electronic and electromagnetic motor control devices; programmable controllers; motor protection; solid state power device application to DC and AC power conversion.

583: Electric Power Distribution System Design. 0-3-3. Preq., ELEN 481 or permission of instructor. Design of utility distribution systems. Substation layout, switching devices, aerial and underground lines and cables, code requirements, development of standards.

584: Electromechanical Energy Conversion. 0-3-3. Preq., ELEN 381 or permission of instructor. Equations of motion of electromechanical systems. Analytical techniques for solution of equation. Typical transducers. The generalized machine system dynamics.

588: Advanced Topics in Power Systems. 0-3-3. Preq., consent of instructor. May be repeated with change in subject matter. Selected topics of current research interest in the field of power systems engineering.

641: Advanced Topics in Computer Systems. 0-3-3. Preq., ELEN 543 or permission of instructor. Topics on the latest advancements in computer systems and computer design.

665: Multidimensional Signal Processing. 0-3-3. Preq., ELEN 565 or permission of instructor. Representations of signals which are functions of several variables. Multidimensional Z-Transforms and discrete Fourier Transforms. 2-D FIR and IIR filter design and implementation.

672: Optimal Control Systems. 0-3-3. Preq., ELEN 571 or permission of instructor. Linear system theory. Statistics of random variables. Response to distributed inputs. System analysis and optimum design with multiple inputs and outputs. Optimum inputs.

673: Nonlinear Control Systems. 0-3-3. Preq., ELEN 571 or permission of instructor. Mathematical models of nonlinear systems. Phase-space analysis. Critical point characterization. Describing functional Sub-harmonic generation. Stability determination. General solution methods.

681: Advanced Topics in Power Systems. 0-3-3. Preq., ELEN 581 or permission of instructor. May be repeated with a change in subject matter. Selected topics of current research interest in the field of power systems engineering.

ENGINEERING (ENGR)

120: Engineering Problem Solving I. 3-1-2. Coreq., MATH 240, CHEM 100. The engineering profession, engineering problem solving, computer applications.

121: Engineering Problem Solving II. 3-1-2. Preq., ENGR 120; Coreq., MATH 241, CHEM 101. Introduction to engineering design, engineering problem solving, computer applications.

122: Engineering Problem Solving III. 3-1-2. Preq., ENGR 121; Coreq., MATH 242, CHEM 102. Engineering design, engineering problem solving, computer applications.

189: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

194: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

220: Statics & Mechanics of Materials. 3-2-3. Preq., ENGR 122, PHYS 201, MATH 242. Resultants and equilibrium of force systems, stress and strain, truss and frame analysis, torsion, bending, deflections of beams, combined loading.

221: Electrical Engineering and Circuits I. 3-2-3. Preq., MATH 243, and credit or registration in MATH 244. Fundamental concepts, units and laws. Network theorems, network simplification, phasors and AC solution of circuits, power and electronic applications.

222: Thermodynamics. 3-2-3. Preq., ENGR 122, MATH 242. Fundamental concepts, properties of pure substance, work, heat, first and second laws of thermodynamics, entropy, cycle analysis.

289: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

294: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

299: Cooperative Education Applications. 40-0-1 (7). Preq., Admission to the College of Engineering and Science Cooperative Education Program.

300: European Influence on Engineering. 7-1-3. Preq., Sophomore standing or consent of instructor. European influence on Engineering theory and

practice. Engineering accomplishments in Europe. Impact of engineering on western civilization.

389: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

394: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

401: Engineering Economy. 0-2-2. Preq., MATH 220 or 242. Economic analysis of engineering design alternatives.

431: Contracts and Specifications. 0-2-2. Preq., junior standing or consent of instructor. Legal documents of construction contracts.

489: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

494: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in the College of Engineering and Science. May be repeated for credit.

530: Engineering Experimentation and Research. 4-2-3. Preq., Working knowledge of statistics. The purpose of this course is to prepare graduate students to conduct experimental research. This interdisciplinary course introduces students to the topics needed in order to design experiments and measurement systems successfully.

566: Quality in Engineering. 0-3-3. Preq., STAT 400. Principles of quality as applied to engineering processes. Applications to the engineering workplace and industrial/academic research will be emphasized.

589: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Engineering and Science.

590: Application of Artificial Intelligence Techniques. 3-2-3. Preq., Permission of instructor. Introduction to artificial intelligence agents and technologies and their applications in industrial, mechanical, and manufacturing engineering systems.

592: Engineering Computational Methods. 0-3-3. Preq., Consent of instructor. Solution of linear and nonlinear systems of equations, roundoff errors, stability, convergence, interpolation and extrapolation, finite difference, approximation of functions, DFT/FFT radix 2, random numbers.

594: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Engineering and Science.

622: The Academic Enterprise. 0-1-1. Topics include college teaching, proposal preparation and research, scholarly activities, service, record keeping, and maintaining balance between professional and personal life.

631: Global Competitiveness and Management of Technology. 0-3-3. Preq., Consent of instructor. Principles of technology development and management in a global context, and their applications in the planning and implementation of new technological capabilities.

641: Formulation of Solutions to Engineering Problems. 0-3-3. Preq., Consent of instructor. Approaches used to formulate solutions to physical engineering problems, mathematical representation of physical laws, boundary value problems, variational methods, common mathematical approaches to solutions, approximate solutions, validity of solutions.

651: Research and Dissertation. Doctoral students only. Registration in any quarter may be for three semester hours credit or multiples thereof, up to a maximum of nine semester hours credit per quarter. Maximum total credit allowed is thirty hours.

ENGLISH AS A SECOND LANGUAGE (ESL)

103: ESL Grammar Laboratory. 3-0-1 (3). Sentence pattern exercises for non-native speakers.

104: ESL Pronunciation Laboratory. 3-0-1 (3). Pronunciation and vocabulary exercises for non-native speakers.

111: Level I English Grammar. 0-3-3. High beginning grammar in context for non-native speakers.

112: Level I Writing. 0-3-3. Basic sentence patterns and paragraph structure for non-native speakers.

113: Level I Vocabulary/Conversation. 0-3-3. Pronunciation, word study, and contextual practice for non-native speakers.

114: Level I Reading. 0-3-3. For non-native speakers at the 1,000-word vocabulary level.

121: Level II English Grammar. 0-3-3. Low intermediate grammar in context for non-native speakers of English.

122: Level II Writing. 0-3-3. A continuation of beginning writing skills for non-native speakers. Emphasis on paragraph organization and structure.

123: Level II Vocabulary/Conversation. 0-3-3. Word study through contextual readings and teacher/test guided conversational practice for non-native speakers.

124: Level II Reading. 0-3-3. For non-native speakers at the 1,500-word vocabulary level.

203: ESL Listening Comprehension Laboratory. 3-0-1 (3). Exercises in listening comprehension skills for non-native speakers.

204: ESL Conversation Laboratory. 3-0-1 (3). Exercises for developing conversation skills for non-native speakers.

231: Level III English Grammar. 0-3-3. High intermediate grammar in context for non-native speakers.

232: Level III Writing. 0-3-3. High intermediate writing skills for non-native speakers. Emphasis on paragraphs and short compositions.

233: Level III Vocabulary/Conversation. 0-3-3. Listening comprehension, auditory cues, vocabulary study and conversational exercises for non-native speakers.

234: Level III Reading. 0-3-3. Reading skills for non-native speakers at the 3,000-word vocabulary level and above.

241: Level IV English Grammar. 0-3-3. Advanced grammar in context for non-native speakers.

242: Level IV Writing. 0-3-3. Advanced composition skills for non-native speakers. Emphasis on essay writing and elementary research techniques.

243: Level IV Vocabulary/Conversation. 0-3-3. Advanced word study to assist non-native speakers in isolating and contextualizing problems within a specific written passage.

244: Level IV Reading. 0-3-3. Reading skills for non-native speakers at the university level.

305: Level V Communication Skills. 0-3-3 (9). Advanced listening, speaking, and body language techniques for non-native speakers studying in the university or assisting or teaching in the American classroom.

454: English Grammar in ESL Teaching. 0-3-3. Preq., Senior standing. Analysis of English grammar specifically for developing instructional techniques used in teaching grammar for communicative competence in ESL. Also listed as EDUC 454. **(G)**

460: Methods for Teaching and Testing in ESL. 0-3-3. Preq., Senior standing. Theories and techniques for teaching English as a Second Language and evaluating student performance; emphasis on communicative competence. Also listed as EDUC 460. **(G)**

470: Curriculum Development and Design for ESL. 0-3-3. Preq., Senior standing. Selection of objectives, content, task implementation, and pedagogy for teachers of English as a Second Language. Also listed as EDUC 470. **(G)**

493: Cross-Cultural Communication for ESL Teaching. 0-3-3. Preq., Senior standing. Concepts of culture and the relationship of language acquisition to the cultural setting with specific application to the teaching of ESL. Also listed as EDUC 493. **(G)**

ENGLISH (ENGL)

099: Preparation for College English. 0-3-3. Required if English ACT score is less than 17, or Verbal SAT score is less than 430. Grammar, punctuation, spelling, and vocabulary, with the development of writing skills. Special emphasis on the sentence and paragraph . (Pass/Fail)

100: Freshman Composition I. 1-3-4. Preq., English ACT score between 17 and 18 inclusive, or Verbal SAT score between 430 and 450 inclusive, or English 099. Standard course for first-year college students; the three stages of writing (prewriting, writing, and rewriting); writing essays in various modes; grammar review. Includes 1 hour weekly tutorial lab. Credit will not be given for both ENGL 100 and ENGL 101.

101: Freshman Composition I. 0-3-3. Preq., English ACT score is greater than or equal to 19, or Verbal SAT score is greater than or equal to 460. Standard course for first-year college students; the three stages of writing (prewriting, writing, and rewriting); writing essays in various modes; grammar review. Credit will not be given for both ENGL 100 and ENGL 101.

102: Freshman Composition II. 0-3-3. Preq., ENGL 101. Continues work of Composition I; includes preparation of a research paper from library sources.

103: Foundations of Ancient Civilization. 0-3-3. Interdisciplinary study of major works of ancient Greek and Roman civilization. For HONORS Program students only. Satisfies course work in ENGL 101, or 102. Also listed as HIST 103.

104: Foundations of Medieval and Renaissance Civilization. 0-3-3. Interdisciplinary study of major works of Medieval and Renaissance civilization. For HONORS Program students only. Satisfies course work in ENGL 101, or 102, or 201. Also listed as HIST 104.

200: Poetry Appreciation. 0-3-3. Preq., ENGL 102. Introduction to poetry designed for students seeking to fulfill General Education requirements under Humanities.

201-202: Sophomore English-Introduction to British and American Literature. 0-3-3 each. Preq., ENGL 101 and 102.

ENGL 201 is a prerequisite for advanced courses in British literature; ENGL 202 is a prerequisite for advanced courses in American literature.

203: Foundations of Modern Civilization. 0-3-3. Interdisciplinary study of major works of modern civilization. For HONORS Program students only. Satisfies course work in ENGL 102, or 201. Also listed as HIST 203.

204: Foundations of American Civilization. 0-3-3. Interdisciplinary study of major works of American civilization. For HONORS Program students only. Satisfies course work in ENGL 102, or 202. Also listed as HIST 204.

303: Technical Writing. 0-3-3. Preq., ENGL 102. Development of technical writing skills and styles; various technical writing assignments, including a technical report.

308: The Short Story. 0-3-3. Preq., ENGL 201 or 202. Study of the form and development of the short story.

325: Contemporary English and American Poetry. 0-3-3.

332: Advanced Grammar. 0-3-3. Preq. ENGL 102. Study of descriptive grammar with some prescriptive grammar and introduction to transformational grammar.

336: Advanced Composition. 0-3-3 (6). Preq., ENGL 102. Writing longer essays in various rhetorical modes, with attention to appropriate writing styles.

384: Introduction to Creative Writing. 0-3-3. Preq., ENGL 201 or 202. Introduction to traditional and contemporary forms of short fiction and poetry through study of selected models. Students required to write in both genres.

400: Theories of Composition. 0-3-3. A course designed to familiarize prospective English teachers with theories of teaching composition. **(G)**

401: The American Mind. 0-3-3. Important currents of ideas that have found expression in American literature. **(G)**

403: Chaucer. 0-3-3. **(G)**

404: Milton. 0-3-3. **(G)**

406: World Masterpieces. 0-3-3. Survey of major non-English literary texts in the Western Tradition. **(G)**

407: Principles and Techniques of Literary Criticism. 0-3-3. **(G)**

408: American Poetry. 0-3-3. Preq., ENGL 202. Study of major poets from the Puritans to the contemporary period.

409: American Fiction of the Nineteenth Century. 0-3-3. Study of the rise of American fiction through Henry James. **(G)**

410: The Eighteenth-Century British Novel. 0-3-3. Study of the rise of the British novel from its inception to the end of the 18th century. **(G)**

411: The Nineteenth-Century British Novel. 0-3-3. Preq., ENGL 201. Study of the development of the British novel from Austen to the end of the nineteenth century. **(G)**

412: The Twentieth-Century British Novel. 0-3-3. Preq., ENGL 201. Study of the development of the British novel from the Edwardian Period to the present. **(G)**

413: The Romantic Period. 0-3-3. Study of the major writers of the age. **(G)**

414: The Victorian Period. 0-3-3. Study of the major writers of the age. **(G)**

415: Shakespeare. 0-3-3. The major plays and the poems. (Same as SPTH 415.) **(G)**

416: American Literature: Beginnings to 1865. 0-3-3. Study of American writing from the Colonial period through the Civil War. **(G)**

417: American Literature: 1865 to Present. 0-3-3. Study of American writing from Reconstruction to the contemporary period. **(G)**

418: The American Renaissance. 0-3-3. Preq., ENGL 202. Study of the major authors and cultural contexts of the American Renaissance, 1830-1860.

419: Contemporary Drama. 0-3-3. American, English, and European. **(G)**

420: The Continental Novel. 0-3-3. **(G)**

421: History and Philosophy of Rhetoric. 0-3-3. Survey of the development of rhetoric from Ancient Greece and Rome to current theories and practice. **(G)**

422: The English Language. 0-3-3. Primarily a course in the history of the language. **(G)**

423: English Words and Idioms. 0-3-3. Rhetoric and logic as applied to critical thinking. Semantics. Exercises in propaganda analysis and identification of fallacies. **(G)**

424: Southern Literature. 0-3-3. Study of the works of writers who have interpreted the American South, with emphasis on the authors of the Southern Renaissance. **(G)**

425: Russian Literature in English Translation. 0-3-3 (6). Representative works of Russian literature from the 19th and 20th centuries; repeatable for credit with different course content. May not be counted towards a minor in Russian. Also listed as RUSS 425. **(G)**

426: Spanish Literature in English Translation. 0-3-3 (6). Representative works of Spanish literature from the Middle Ages to the 20th century; repeatable for credit with different course content. May not be counted towards a major or minor in Spanish. Also listed as SPAN 426. **(G)**

427: Latin American Literature in English Translation. 0-3-3 (6). Representative works of 20th-century Latin American literature; repeatable for credit with different course content. May not be counted towards a major or minor in Spanish. Also listed as SPAN 427. **(G)**

428: French Literature in English Translation. 0-3-3 (6). Representative works of French literature from the Middle Ages to the 20th century; repeatable for credit with different course content. May not be counted towards a major or minor in French. Also listed as FREN 428. **(G)**

429: American Fiction of the Twentieth Century. 0-3-3. Study of the "American Century" as reflected in representative novels and short stories. **(G)**

430: African American Literature. 0-3-3. Study of the development of African American writing, with emphasis on the period from the Harlem Renaissance to the present. **(G)**

438: Sixteenth Century English Literature (excluding Shakespeare). 0-3-3. **(G)**

439: Seventeenth Century English Literature (excluding Milton). 0-3-3. **(G)**

440: Eighteenth Century English Literature. 0-3-3. **(G)**

452: The Literature of the Bible. 0-3-3. A survey of literary genres of the Old and New Testaments, focusing on the poetic and/or narrative art of each. **(G)**

455: Modern British Literature. 0-3-3. Preq., ENGL 201 or 202. Study of the poetry, plays, and fiction from the early 20th century to World War II. **(G)**

456: Contemporary British Literature. 0-3-3. Preq., ENGL 201 or 202. Study of the poetry, plays, and fiction from World War II to the present. **(G)**

459: Technical Writing and the Scientific Method. 0-3-3. Preq., ENGL 303. Study of scientific thought, methodologies, and rhetorical strategies; application to style and structure in technical discourse. **(G)**

460: Advanced Technical Writing. 0-3-3. Preq., ENGL 303. Emphasis on longer reports and specialized forms of technical writing, such as manuals. **(G)**

461: Technical Writing for Publication. 0-3-3. Preq., ENGL 303. Writing articles for scientific and technical journals, with emphasis on audience analysis and appropriate style. **(G)**

462: Technical Editing. 0-3-3. Preq., ENGL 303. The work of an editor, including editing a text, planning projects, and working with authors, illustrators, and production workers. **(G)**

463: Scientific and Technical Presentations. 0-3-3. Preq., ENGL 303. Presenting technical information to specialized and non-technical audiences; emphasis on organization, support, and clarity of presentation; effective use of visual materials. **(G)**

464: Occupational Technical Writing. 0-3-3. Preq., ENGL 303. Preparing the technical writer to plan and conduct training sessions within the organization and to supervise others engaged in writing tasks. **(G)**

465: Specification, Bid, Grant, and Proposal Writing. 0-3-3. Preq., ENGL 303. Writing specifications, bids, grants, and proposals; emphasis on audience analysis, organization, and writing style. **(G)**

466: Technical Writing Internship. 9-0-3 (6). Preq., permission of Department Head. On-the-job experience for the technical writing student; intended to give supervised practice under realistic working conditions. Internships are to be arranged individually. **(G)**

467: Special Problems in Technical Communication. 3 hours credit (6). Preq., Permission of Department Head. The selection, study and writing of special problems. Students will work on individual projects under direct supervision. **(G)**

468: Readings in Scientific and Technical Communications. 0-3-3. Preq., ENGL 303. Study of the current material written about technical communication, with a reading and critical analysis of various technological journals. (G)

469: Graphics in Technical writing. 0-3-3. Preq., ENGL 303. Theory and practice of illustrating texts, with emphasis on electronic media to integrate nonverbal and written materials.

470: Linguistics. 0-3-3. Preq., ENGL 201 or 202. Systematic study of language acquisition, change, and variation; application to teaching grammar, writing, and/or literature. Also listed as FLNG 470. (G)

475: Special Topics. 0-3-3 (6). Seminar with topic to be designated by the instructor. (G)

480: Science Fiction. 0-3-3. Study of science fiction within the context of modern literature, including short stories, novels, and films. (G)

482: Folklore Studies. 0-3-3. Study of folklore theory and genres in culture and literature with topics ranging from verbal arts to ritual and belief. (G)

484: Advanced Creative Writing. 0-3-3. Preq., ENGL 384 or instructor's permission. Workshop format includes intensive criticism of student writing in short fiction and/or poetry with emphasis on submission for publication. (G)

491: Advanced Expository Writing. 0-3-3. Writing essays and reports for professional publication; focus on style, format, and editing manuscripts. (G)

500: Teaching College Composition. 0-3-3. Preparation for teaching Developmental English and Freshman English; includes theory, research, technology, and pedagogy related to college composition.

515: Shakespeare Seminar. 0-3-3 (6). Preq., ENGL 415 or its equivalent. Study of Shakespeare texts and background writings of the Elizabethan and Jacobean Periods; repeatable once for credit with different instructor and/or course content.

520: Seminar in Composition. 0-3-3 (6). Selected reading and research topics in composition studies; repeatable for credit with different instructor and/or course content.

560: Seminar in Technical Writing. 0-3-3 (6). Preq., ENGL 303 or equivalent. Selected reading and research topics in technical writing theory and practice; repeatable once for credit with different instructor and/or course content.

575: Special Topics. 0-3-3 (6). Graduate seminar with topic to be designated by instructor.

583: Seminar in British Literature. 0-3-3 (6). Reading and research topics in British Literature; repeatable once for credit with different instructor and/or course content.

584: Seminar in American Literature. 0-3-3 (6). Reading and research topics in American Literature; repeatable once for credit with different instructor and/or course content.

585: English Teachers' Workshop. 0-3-3. A course designed primarily for school teachers of English.

591: Literary Research and Bibliography. 0-3-3. Focuses upon methodology of scholarship, stressing various kinds of literary problems and approaches to their solutions; emphasis on descriptive and analytical bibliography.

ENVIRONMENTAL SCIENCE (ENSC)

200: Introduction to Environmental Sciences. 0-3-3. Basic laws, principles and issues related to the causes, effect and controls of environmental problems. Man-environment interaction.

275: Aquatic Bioassays. 0-1-1. Internet-based course centering on governmental regulations concerning bioassays to test for toxicity in waste effluents released into natural waters in the United States. Also listed as BISC 275.

300: Agricultural Pollution. 0-3-3. Study of various agricultural practices as they relate to the causes and solutions to environmental impact of agriculture on the air, water, and soil.

310: Soil Science. 0-3-3. Preq., CHEM 100, 101, 102. A general study of soil science, emphasizing the relation of soil properties and processes to plant growth. Also listed as PLSC 310.

311: Soil Science Laboratory. 3-0-1. Preq. or Coreq., ENSC 310. Laboratory exercises to elaborate fundamental principles of soil properties, soil testing, and soil survey reports. Also listed as PLSC 311.

313: Ecology. 4 1/4-2-3. Preq., BISC 132, 133. An overview of the interactions of plants, animals, and non-living factors as they influence individuals, populations, communities, and ecosystems.

400: Environmental Science Seminar. 0-1-1(3). Reviews, reports, and discussions of current problems relating to environmental science.

421: Epidemiology. 0-3-3. Methods of data collection and analysis to determine the frequency, distribution and cause of disease and/or injury in human and non-human populations.

422: Occupational Health and Safety. 0-3-3. The design and implementation of occupational health and safety services to including fitness-to-work evaluations, health monitoring, hazard evaluation and response to emergencies involving hazardous substances. (G)

444: Environmental Microbiology. 4-2-3. Preq., BISC 260. Basic and contemporary aspects of soil, water, and industrial microbiology.

446: Instrumentation. 3-2-3. Preq. 12 hours of BISC or CHEM. Emphasizes the operational theory, use, and maintenance of instruments appropriate to biological investigation through didactic and laboratory exercises.

456: Environmental Chemistry. 0-3-3. Preq., one year of college chemistry and junior standing. Chemical principles that regulate and affect the environment. (G)

458: Environmental Law. 0-3-3. Preq., BISC 130, 131, or approval of instructor. A review and analysis of state and federal laws, conventions, and international treaties that influence natural resource management. (G)

477: Cooperative Education Work Experience. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located within a 100 mile radius of Ruston. Application and supervision fee required.

478: Cooperative Education Work Experience. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located within a 101-200 mile radius of Ruston. Application and supervision fee required.

479: Cooperative Education Work Experience. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located beyond a 201 mile radius of Ruston. Application and supervision fee required.

FAMILY & CHILD STUDIES (FCS)

100: Marriage and Family Relations. 0-3-3. Significant factors for successful marriage, marital adjustment, and family relations.

101: Skills for Marriage. 0-3-3. Designed to provide students with information and skills necessary to facilitate an enduring and satisfying marriage.

200: Parenting. 0-3-3. Study of the parenting role. Emphasis on parent-child interaction as it influences child growth and development.

201: Introduction to Child and Family Development. 0-3-3. Basic principles and sequences in human development from prenatal period through aging years. Emphasis on developmental tasks, forces influencing development, and the family life cycle.

210: Family Interpersonal Relationships. 0-3-3. The study of interaction between individuals with application to family dynamics, personal relationships, professional interaction, and job competency.

221: Parent Involvement in Preschool Education. 0-2-2. Introduction to the theories and methods of parent involvement in early childhood (preschool) education.

276: Children's Near Environments. 0-3-3. An examination of issues related to the near environment of children including child nutrition, food preparation and activities, housing, equipment, and clothing needs.

277: Guiding Infants and Young Children. 0-2-2. Principles and techniques of positive guidance emphasizing a problem solving philosophy and a child-centered approach.

280: Hospitalized Children and Youth. 0-3-3. Study of issues involved in childhood illnesses and hospitalization.

291: Orientation to Child Life Programs. 0-3-3. A study tour of child life programs and services.

301: Early Childhood Development. 3-2-3. Preq., FCS 201. The development of young children. Theory and practice are correlated through readings, class discussions, and nursery school laboratory experiences.

311: Literacy Development in Early Childhood Education. 0-3-3. Preq. or Coreq., Admission to Teacher Education Upper Division or consent of instructor. Development of early language skills. Emphasis on the preschool language arts curriculum as preparation for language development.

320: Family Theory. 0-3-3. Preq., FCS 100, 201 or consent of instructor. An overview of theoretical frameworks in family science with primary emphasis given to application of constructs.

321: Methods in Early Childhood Education. 3-2-3. Preq., Admission to Teacher Education Upper Division and FCS 301 or consent of instructor.

Important factors in planning for preschool children. Emphasis on objectives, planning nursery school experiences, and evaluation.

331: Infant Development. 3-2-3 Preq., FCS 201 or consent of instructor. Survey of influences on prenatal and infant development. Theory and practice correlated through readings, class discussion and laboratory experiences.

341: Issues and Applications in Middle Childhood and Early Adolescence. 3-2-3. Preq., FCS 201 or consent of instructor. A survey of middle childhood and early adolescent years as they relate to children's development and family interaction; includes observation and laboratory experiences.

355: Advanced Interpersonal Skills for the Family & Child Advocate. 0-3-3. Preq., FCS 100, 210. Examination of interpersonal skills for the family and child helping professional or advocate. Discussion of traditional helping paradigms.

361: Observation and Assessment Techniques of Children. 0-2-2. Preq., FCS 201, or consent of instructor. Skills and strategies needed to observe and assess children's development in a clinical setting.

380: Understanding Childhood Diseases and Disorders. 0-3-3. Overview of childhood diseases/disorders, diagnostic tests, and treatment, with emphasis on effects of illness on normal growth and development and family functioning.

395: Research Methods in Family and Child Studies. 0-3-3. Preq., FCS 201 or consent of instructor. Examination of methods, implications, and ethics of child and family research. Theory based research and com petency in reading empirical studies will be emphasized.

400: Contemporary Family Issues. 0-3-3. Selected issues related to family interaction and adjustment from an ecosystem perspective.

401: Curriculum and Organization of Early Childhood Education Programs. 0-3-3. Preq., Admission to Teacher Education Upper Division and FCS 321 or consent of instructor. Organization of preschool programs with emphasis on creative activities, materials and facilities. **(G)**

410: Multi-Cultural Family Studies. 0-3-3. Cross-cultural survey of family patterns and their implications for professionals in the community and workplace.

420: Issues in Family Life Education. 0-3-3. Preq., FCS 321, or consent of instructor. Methodology of teaching current family issues in family education programs. Development of family life educator skills with emphasis on parent education and marital enrichment. **(G)**

421: Student Teaching in Early Childhood Education: Nursery School. 16-1-6. Preq., Admission to Teacher Education Upper Division and FCS 321, consent of instructor, preregistration and application required. An intensive practical experience in supervised nursery school teaching.

432: Children Under Stress. 0-3-3. Preq., FCS 301 or consent of instructor. In-depth study of issues relating to the identification, understanding, and intervention in childhood stress.

435: Family Coping. 0-3-3. Designed to help students recognize and adapt to stressors of everyday living. Particular attention is placed on understanding family involvement in coping with stress. **(G)**

447: Issues in Gerontology. 0-3-3. Preq., FCS 201 or PSYC 408 or consent of instructor. Issues that impact older age adults including public policy, close relationships, sexuality, housing, nutrition and apparel. **(G)**

451: Theory, Guidance, and Therapeutic Value of Play. 0-3-3. Preq., FCS 301 or consent of instructor. Study of play in teaching, therapy, and creativity for children and youth.

461: Administration of Programs for Young Children. 0-2-2. Preq., FCS 301 and 331 or consent of instructor. Planning and administration of programs for young children.

471: Family Law and Public Policy. 0-3-3. Preq., FCS 100 and 400 or consent of instructor. The study of the legal system and public policy as they relate to family structure and function. **(G)**

480: Families with At Risk Children, Birth Through Preschool. 0-3-3. Preq., FCS 320 or consent of instructor. Application of family theory to families with special needs children, birth through preschool. Appropriate for child life, early childhood education, early intervention professionals. **(G)**

481: Team Functioning for Family and Child Studies Professionals. 0-3-3. Team development and functioning including processes, barriers and interdisciplinary collaborations. **(G)**

482: Nutrition and Medical Management of Infants At Risk. 0-3-3. Preq., FCS 331 or consent of instructor. Overview of nutritional and medical care issues associated with infants and young children at risk for or with disabilities. **(G)**

490: Perspectives in Family and Child Studies. 0-3-3 (9). Preq., FCS 201 and 210 or consent of instructor. An in-depth study of current trends and issues that relate to strengthening children and families.

501: Contemporary Issues in Infancy and Preschool Years. 0-3-3. Seminar in current research in child development with emphasis on the infancy and preschool years.

502: Advanced Child Development. 0-3-3. An in-depth exploration into social/emotional, cognitive and physical development of children from birth to 8 years of age.

510: The Family in Middle and Later Years. 0-3-3. Study of changes, needs and adjustments during the middle and later years of the family.

520: Interpersonal and Family Dynamics. 0-3-3. Study of dynamics of family interaction and relationship functioning. Emphasis on current research and issues confronting contemporary families.

521: Family Crisis. 0-3-3. Origins, development, and coping responses to predictable and unexpected crises of family systems in varied ecological settings.

522: Family Life Education Programs. 0-3-3. Study of theory and methods used in developing programs to reduce mental health risks and build strengths of families.

530: Early Childhood Programs. 0-3-3. Survey of early childhood program models.

540: Parent Involvement. 0-3-3. Theories, issues and public policy of parent involvement in the educational process of children.

561: Advanced Administration of Early Childhood Programs. 0-3-3. An in-depth study of administering and organizing programs serving young children.

FINANCE (FINC)

100: Family Financial Management. 0-3-3. Specific family financial decisions, including budgeting, insurance, home purchase or rent, consumer rent, personal income tax, lifetime financial planning.

318: Business Finance. 0-3-3. Preq., ECON 202 or 215, ACCT 202, and junior standing. An introduction to the principles of financial management including the role of the financial manager, problems of liquidity vs. profitability, budgeting of capital expenditures, management of short-term and long-term funds, and management of assets.

319: Intermediate Financial Management. 0-3-3. Preq., FINC 318. Advanced practices of financial management are developed. Financial models used in decision-making and their application to major areas of business finance are emphasized.

330: Risk and Insurance. 0-3-3. A comprehensive study of riskbearing, including insurance and non-insurance methods of handling a risk; introduction to the fields of life, disability, property, and casualty insurance.

401: Internship in Finance I. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Finance II. 3 hours credit. (Pass/Fail) Preq. consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

412: International Finance. 0-3-3. Preq., FINC 318. A study of the various modes of financing international trade, including international financial organizations, an analysis of exchange rates, foreign investments, multinational firms, and international banking. **(G)**

414: Investments. 0-3-3. Preq., FINC 318. Analyses of investments in common stocks, bonds, and other financial assets; sources of information for the investor; analysis of firms' financial statements; classes of investments. **(G)**

421: Portfolio Risk Management. 0-3-3. Preq., FINC 414. Examine concepts in portfolio theory. Evaluate the implications of portfolio building, security selection, and risk-management techniques, including the use of derivatives.

422: Bank Management. 0-3-3. Preq., FINC 318. Problems in organization, operation, and management of commercial banks, with special emphasis on credit banking. **(G)**

423: Bank Management: Cases, Policies and Practices. 0-3-3. Preq., FINC 318. Application of decision-making procedures to bank financial management situations, including evaluation of bank performance, capital acquisition, liquidity, and loans.

425: Money Markets, Capital Markets and Financial Institutions. 0-3-3. Preq., FINC 318. A survey of the markets in which funds are traded; a survey of the lending and investing characteristics of selected financial institutions. **(G)**

430: Advanced Financial Management. 0-3-3. Preq., FINC 318. The case method is used to apply decision-making procedures to realistic problems in financial management.

431: Life Insurance. 0-3-3. A comprehensive study of personal and group life, accident and health, hospitalization, old age, survivors and disability insurance and annuities.

432: Property Insurance. 0-3-3. A comprehensive study of fire, burglary, robbery, forgery, liability, inland and ocean marine insurance, and surety and fidelity bonds.

435: Private Pensions, Group Insurance and Estate Planning. 0-3-3. Analysis of pension regulations, design, and funding, actuarial considerations, integration with Social Security benefits, survey of group insurance, and implications for estate planning.

442: Principles of Real Estate and Land Economics. 0-3-3. Land utilization, city growth, land development, legal processes and transactions, real estate marketing, financing and financial institutions, taxes, condemnation, planning and zoning.

443: Appraisal. 0-3-3. Application of value theory and principles to real estate values; professional appraisal principles methodology. Corresponds to Appraisal I, the Appraisal Institute.

444: Appraisal of Urban Properties. 0-3-3. Preq., FINC 443. Appraisal case studies and practices in appraisal of commercial and industrial properties; generally corresponds to Appraisal II, Urban Properties, and the Appraisal Institute.

445: Real Estate Finance. 0-3-3. Preq., FINC 318. Finance principles applied to real estate. Sources of funds, legal and financial instruments, and analytical methods for decision-making. **(G)**

511: Risk Management. 0-3-3. The economic concept of risk and various techniques utilized in the discovery, evaluation and treatment of a business pure risk.

515: Financial Management. 0-3-3. Preq., ACCT 505 or consent of instructor. The study of a financial manager's role in financial planning, acquisition and management of funds for a business firm.

516: Financial Management: Policies and Practices. 0-3-3. Preq., FINC 515 or consent of instructor. Application of decision-making procedures to financial management problems. Student is required to solve case problems and manage the financial affairs of computer simulated firm.

517: Capital Budgeting Seminar. 0-3-3. Preq., FINC 515 or consent of instructor. A systematic and thorough treatment of the theory and practice of capital expenditure management, emphasizing financial modeling and employing a quantitative format.

518: Advanced Commercial Banking. 0-3-3. FINC 515 or consent of instructor. Advanced studies in contemporary banking practices with special emphasis in credit analysis. Structuring of loans in specialized commercial lending areas as well as the entire credit granting decision process will be examined.

525: Seminar in Investments. 0-3-3. FINC 515 or consent of instructor. Study of the theories and techniques of investment analysis for purposes of evaluation and selection of investments.

550: Directed Study in Finance. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of finance.

610: Seminar in Financial Theory I. 0-3-3. Preq., FINC 515 (also, desirable that student has had an intermediate or advanced economics course). Examination and application of contemporary financial theory and analysis relating to business finance.

611: Risk Management. 0-3-3. Requires Doctoral standing. May require additional class meetings. The economic concept of risk and various techniques utilized in the discovery, evaluation and treatment of a business pure risk. Credit will not be given for FINC 611 if credit is given for FINC 511.

615: Seminar in Financial Theory II. 0-3-3. Preq., FINC 610. Requires Doctoral standing. Detailed study of both classic and contemporary literature that provides students with a cross-section of modern theoretical developments in the field of business finance.

616: Financial Management: Policies and Practices. 0-3-3. Preq., FINC 515 or consent of instructor. Requires Doctoral standing. May require additional class meetings. Application of decision-making procedures to financial management problems. Student is required to solve case problems and manage the financial affairs of computer simulated firm. Credit will not be given for FINC 616 if credit is given for FINC 516.

617: Capital Budgeting Seminar. 0-3-3. Preq., FINC 515 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A systematic and thorough treatment of the theory and practice of capital expenditure management, emphasizing financial modeling and employing a quantitative format. Credit will not be given for FINC 617 if credit is given for FINC 517.

618: Advanced Commercial Banking. 0-3-3. FINC 515 or consent of instructor. Requires Doctoral standing. May require additional class meetings. Advanced studies in contemporary banking practices with special emphasis in credit analysis. Structuring of loans in specialized commercial lending areas as well as the entire credit granting decision process will be examined. Credit will not be given for FINC 618 if credit is given for FINC 518.

625: Seminar in Investments. 0-3-3. FINC 515 or consent of instructor. Requires Doctoral standing. May require additional class meetings. Study of the theories and techniques of investment analysis for purposes of evaluation and selection of investments. Credit will not be given for FINC 625 if credit is given for FINC 525.

650: Directed Study of Finance. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of finance.

685: Comprehensive Exam in Finance. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in finance. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in finance. Requires consent of graduate director.

FOOD & NUTRITION (FNU)

103: Human Nutrition and Weight Control. 0-1-1 (3) Pass/Fail. Personalized weight control program based on recommended nutrients, behavior modification and energy balance.

203: Human Nutrition. 0-3-3. Functions of various nutrients and their interrelationships in children and adults with emphasis on personal food habits and selection.

220: Life Cycle Nutrition. 0-3-3. Evaluation of variations in nutrition requirements in all stages of the life cycle, including prenatal, infant, childhood, adolescent, adult, and geriatric nutrition.

223: Nutrition Education. 0-2-2. Basic principles of nutrition with special emphasis on the school-age child. Techniques of presenting nutrition information to children (Planned for non-majors).

232: Basic Food Science. 3-2-3. Use of food science principles in food selection and preparation procedures. Introduction to food science research.

233: Creative Experiences in Nutrition. 3-0-1. Preq., or Coreq., FNU 223 or 203. Food preparation and nutrition activities for young children.

253: Sports Nutrition. 0-3-3. Nutrient needs and food related issues in exercise for wellness and training for competitive athletes.

274: Introduction to Dietetics. 0-3-3. An introduction to dietetics, trends affecting the profession, and the research process, including computer applications.

302: Quantity Foods Field Experience. 4-2-3. Preq., BISC 214, FNU 352. Equipment and production in the food service industry; field experience in food service facilities.

305: Nutrition Education Methods. 0-2-2. Preq. or Coreq., FNU 203 or 253. Principles and methods of teaching in nutrition education.

343: Health Care Delivery Systems. 0-2-2. Preq., upper division standing or permission of instructor. Aspects of current health care delivery systems in the United States, with a focus on the delivery of nutrition care services.

352: Food Systems Management I. 0-3-3. Preq., BISC 214, FNU 232, dietetic major or consent of the instructor. Study of the principles of organization and management applied to institutional food service.

402: Human Nutrition Biochemistry I. 0-3-3. Preq., FNU 203, BISC 227 and 228, CHEM 252. Food sources and utilization of carbohydrates, proteins, and fats in humans.

403: Community Nutrition. 0-3-3. Preq., FCS 201; FNU 203. Prevention and treatment of nutrition problems common to individuals, families, and communities. Includes survey of federal, state, and local nutrition programs for various age groups.

404: Human Nutritional Biochemistry II. 0-3-3. Preq., FNU 402. Food sources and utilization of vitamins, minerals, and water in humans.

412: Advanced Food Science. 3-2-3. Preq., FNU 232, CHEM 252 or consent of instructor. Study of the chemical and physical nature of foods. Individual investigations of selected problems.

414: Nutrition Assessment. 3-2-3. Preq., FNU 402. Planning, implementation, and evaluation of nutrition needs and provision of individualized client care.

423: Medical Nutrition Therapy I: Diabetes, Cancer, & Heart Disease. 3-2-3. Preq. or Coreq., FNU 414. Medical nutrition therapy for cardiovascular disease, diabetes, cancer, food allergies, and AIDS.

443: Medical Nutrition Therapy II: GI, Renal Disease, and Nutrition Support. 3-2-3. Preq. or Coreq., FNU 423. Enteral and parental nutrition; medical nutrition therapy for gastrointestinal, liver, and kidney diseases.

463: Medical Nutrition Therapy III: Clinical Applications. 3-2-3. Preq. or Coreq. FNU 443. Structured experiences in nutrition and dietetics to develop assessment, interviewing, and nutrition education skills.

472: Food Systems Management II. 0-3-3. Preq., FNU 302 and 352. Study of the principles of organization and management applied to institutional food service.

480: The Art & Science of Italian Cuisine. 0-3-3. A survey of Italian foods, from the marketplace to the table.

492: Supervised Practice in Nutrition-Dietetics. 3-8 hours credit (27). Preq., Completion of approved didactic program in dietetics. Application required.

503: World Nutrition Problems. 0-3-3. A study of world wide nutritional problems with special emphasis on recent research and contributing factors. Open to non-majors.

512: Food Science and Technology. 0-3-3. Recent developments in science and technology underlying current practices in quality preservation, and problems in nonbacterial spoilage mechanisms of food. Includes survey of freeze-drying, irradiation, antibiotics, antioxidants, enzymes, food additives, and packaging.

517: Graduate Seminar for Supervised Practice Students. 3-0-1 (3). Co-requisite, FNU 492. Seminar designed to promote effectiveness of professional written and oral communications, increase knowledge of research, and review content information in selected topics in dietetics.

523: Recent Advances in Medical Nutrition Therapy. 0-3-3 (12). Preq., FNU 443 or consent of instructor. Current developments in normal nutrition, nutrition assessment, and diet therapy.

525: Nutrition for Educators. 0-3-3. U.S. Dietary Guidelines based nutrition information and resources for preschool through high school age individuals. No prerequisites.

526: Maternal & Infant Nutrition. 0-3-3. A study of current nutritional issues related to pregnancy, lactation, and infancy.

527: Issues in Weight Management. 0-3-3. Critical thinking applied to the issues of weight and health.

528: Nutritional Management of Cardiovascular Disease. 0-3-3. The role of diet in the prevention, development, and treatment of cardiovascular disease.

529: Nutritional Management of Diabetes. 0-3-3. Preq., FNU 443 or consent of instructor. Study of issues related to diabetes including assessment and the role of diet in diabetes management.

530: Nutritional Assessment. 0-3-3. Nutritional assessment of patient with medical problems.

531: Nutrition & Renal Disease. 0-3-3. A study of nutritional issues related to renal disease.

532: Nutrition & Aging. 0-3-3. A study of the nutritional issues related to the aging process.

533: Vitamins and Minerals in Human Nutrition. 0-3-3. Preq., FNU 404 or consent of instructor. Sources, properties and functions of vitamins and minerals in human nutrition.

543: Nutrition and Worksite Wellness. 0-3-3. The role of wellness programs in community and clinical settings, including assessment, planning, implementation, and evaluation of programs.

553: Clinical Management and Private Practice in Dietetics. 0-3-3. Techniques in dietetics-nutrition service settings to develop, manage, and evaluate private practice.

562: Trends in Food Systems Administration. 0-3-3 (12). Preq., FNU 472 or consent of instructor. Seminar on current topics in food systems administration with emphasis on student's area of interest.

603: Nutritional Diagnosis Theory. 0-3-3. Preq., FNU 523 or consent of instructor. Application of outcome-based research and medical nutrition theory as it applies to the nutritional diagnosis of clients.

604: Research Methods in Dietetics and Human Nutrition Services. 0-3-3. Preq., HEC 504 or the equivalent. Study of quantitative and qualitative research methods, design, and analysis in dietetic research.

613: Clinical Nutritional Diagnosis. 3-2-3. Preq., FNU 603. Case study approach to the nutritional assessment, diagnosis, and documentation of nutritional problems.

651: Research and Dissertation. 0-3-3 (12). Preq., FNU 604 and STAT 507.

FOREIGN LANGUAGES (FLNG)

101: Special Offerings in Less Commonly Taught Languages: Elementary 1. 0-3-3. Introduction to a foreign language not listed in other departmental offerings; emphasis on communicative competence for contemporary languages and on reading competence for classical languages.

102: Special Offerings in Less Commonly Taught Languages: Elementary 2. 0-3-3. Preq., FLNG 101. Introduction to a foreign language not listed in other departmental offerings; emphasis on communicative competence for contemporary languages and on reading competence for classical languages.

201: Special Offerings in Less Commonly Taught Languages: Intermediate 1: 0-3-3. Preq., FLNG 102. The more complex structures of a language not listed in other departmental offerings; emphasizes communicative competence for contemporary languages and reading competence for classical languages.

202: Special Offerings in Less Commonly Taught Languages: Intermediate 2: 0-3-3. Preq., FLNG 201. The more complex structures of a language not listed in other departmental offerings; emphasizes communicative competence for contemporary languages and reading competence for classical languages.

203: Special Offerings in Less Commonly Taught Languages: Intermediate 3: 0-3-3. Preq., FLNG 202. The more complex structures of a language not listed in other departmental offerings; emphasizes communicative competence for contemporary languages and reading competence for classical languages.

453: Foreign Language Teaching Methods. 0-3-3. Preq., 12 hours of a foreign language. Study of a broad range of foreign language teaching methods; examination of underlying theories and practical applications. Also listed as EDUC 453. **(G)**

470: Linguistics. 0-3-3. Preq., ENGL 201 or 202. Systematic study of language acquisition, change, and variation; application to teaching grammar, writing, and/or literature. Also listed as ENGL 470. **(G)**

489: Special Topics. 0-3-3 (6). Preq., advanced standing and permission of Department Head. Topic to be designated by the instructor. **(G)**

494: Independent Studies in Foreign Languages. 1-3 credit hours (9). Preq., advanced standing and permission of Department Head. Topics in foreign languages, literature and linguistics for independent study in the student's curriculum specialty.

FOREIGN STUDIES (FSTU)

101: Special Academic Studies. 1-3 hours. Special academic studies conducted in foreign countries.

201: Special Academic Studies. 1-3 hours. Special academic studies conducted in foreign countries.

301: Special Academic Studies. 1-3 hours. Special academic studies conducted in foreign countries.

401: Special Academic Studies. 1-3 hours. Special academic studies conducted in foreign countries.

501: Special Academic Studies. 1-3 hours. Special academic studies conducted in foreign countries.

FORESTRY (FOR)

101: Introduction to Forest Resources. 4-0-1. An introduction to forest resources management and utilization.

201: Microcomputer Applications. 0-3-3. Introduction to microcomputers with specific applications in filing conventions, word processing, spreadsheets, electronic communications, and other topics.

202: Forest Fire. 0-2-2. Fire; its' role in ecosystems, use in management, and control.

205: Dendrology. 3-1-2. Preq., BISC 130 or 134. The identification, classification, characteristics, and distribution of the principal forest trees of the United States, with emphasis on conifers.

206: Dendrology. 4-0-1. Preq., FOR 205. A continuation of FOR 205, with emphasis on hardwoods and spring and summer characteristics.

211: Forest Recreation. 0-2-2. Forestry and non-forestry majors. Recreational use of forests and wild lands. Social, physical, and spiritual

benefits of forest recreation. Forest recreation in the economy of the nation.

215: Forests and Society. 0-3-3. For non-forestry majors. Forestry and its role in today's economic and environmental issues; factors influencing the future of forest resources in the region and nationally.

301: Forestry Ecology. 4-2-3. Preq., FOR 205. Ecological factors affecting the growth and development of trees and stands.

302: Silviculture. 4-2-3. Preq., FOR 301 or BISC 313. An in-depth study of practices used in forest stands to regenerate, cultivate, and harvest them.

303: Regional Silviculture. 0-2-2. Preq., FOR 302. An assessment of the significant biological, physical and economic qualities of the forest regions of the U.S. and their effect on silvicultural practices.

306: Forest Measurements. 4-2-3. Preq., MATH 101 or higher. Principles of sampling and measuring trees, area, forest stands, growth, and land productivity.

312: Forest and Forest Products Entomology. 0-2-2. Study important insects affecting pine, hardwood, and urban trees in the South, including a basic overview of insects in relation to the Animal Kingdom.

313: Forest and Forest Products Pathology. 4-2-3. The important diseases of forests and forest products.

314: Wildlife Habitat Evaluation and Management. 4-2-3. Habitat requirements, evaluation, and management for wildlife.

315: Forest Measurements. 3 credit hours. Preq., FOR 306 and MATH 212. Execution of forest surveys; techniques of growth measurement; determination of volume of trees and stands.

317: Aerial Photo Interpretation. 0-2-2. Principles of recognition and classification of vegetative types on large-scale imagery, including forest inventory techniques.

318: Forest Operations. 3-2-3. Study of mechanized forest operations including all functions from timber felling to delivery of product to mill. Logging safety. Machinery costs. Forest road engineering.

319: Forest Products Manufacturing. 3-0-1. An in-depth look at the manufacturing processes used to produce the major forest products and tours of selected production facilities.

320: Field Silviculture. 8-0-2. Preq., FOR 302. The practice of silviculture field procedures used in the southern forest to regenerate and grow tree stands.

322: Bottomland Hardwoods. 4-1-2. Preq., FOR 320. Silviculture and utilization of bottomland hardwoods.

324: GPS in Natural Resource Management. 4-1-2. Preq., Junior standing or consent of instructor. Introduction to GPS applications in natural resource management.

340: Wood Machining Processes. 3-2-3. Preq., FOR 404 or consent of instructor. Machinery, milling methods, and methods for conversion of trees into usable products.

341: Bonding and Finishing of Wood 3-2-3. Preq., FOR 404 or consent of instructor. Adhesive and cohesive properties of glues and finishes and their use in the forest products manufacturing.

355: Introduction to Geographic Information Systems (GIS). 3-2-3. Preq., junior standing or above or consent of instructor. An introduction to geographic information systems focusing on geographic concepts, spatial data manipulation and analysis, and understanding and application of GIS software.

401: Forest Management. 4-2-3. Preq., Forestry Field Session excluding FOR 319. Managing forest properties to meet landowner objectives using growth and yield models, optimization techniques, best management practices, and sound business principles.

402: Watershed Management. 3-2-3. Preq., FOR 301 and 405, or permission of instructor. Water resources and problems. Emphasis on the forest hydrologic system and its management. **(G)**

404: Wood Technology and Products. 3-2-3. Preq., BISC 130 or 134; FOR 205. Formation, structure, identification and properties of commercial woods plus an overview of the manufacturing processes used to produce the major forest products. **(G)**

405: Forest Soils. 3-2-3. Preq., CHEM 100 or 120, or permission of instructor. Physical, chemical and biological properties of forest soils and associated management problems with an emphasis on site productivity and sustainability. **(G)**

406: Forest Economics/Valuation. 4-3-4. Preq., ECON 201/202 or 215, and junior standing. Economics and financial principles as a basis for decision making in forestry. **(G)**

408: Seasoning and Preservation. 3-2-3. Preq., FOR 404. Theory and practice of air seasoning and kiln drying of forest products. The basis of wood preservation, preservatives, and methods of application. **(G)**

410: Forest Policy. 0-3-3. Preq., Forestry Field Session excluding FOR 319. The basic principles, policies, and professional ethics of federal , state, and private forestry. **(G)**

412: Forest Tree Improvement. 0-2-2. Methods of improvement of forest trees by use of modern plant breeding techniques. **(G)**

413: Professional Practice. 6-0-2. Preq., Forestry Field Session and FOR 401. Data accumulation and analysis; development of forest resource management alternatives and recommendations. A comprehensive state licensure examination or the GRE is mandatory.

414: Wood Products Processing. 3-2-3. Preq., FOR 404. Hardwood and softwood lumber grades. Manufacture of lumber, veneer, plywood, laminated products and reconstituted panels. **(G)**

418: Land Resource Management. 0-3-3. The socioeconomic-political policies and programs concerning the allocation of land and the management of natural resources. **(G)**

420: Problems. 1-3 semester hours credit (9). Special problems in forestry and wood utilization correlated with management of land and natural resources.

422: Seminar 0-1-1. Preq., Senior standing. Development of professional oral communication skills.

425: Forest Growth & Yield Modeling. 0-2-2. Preq., FOR 306, MATH 212, and AGSC 320 or QA 233, or MATH 200 or PSYC 300. Concepts, theories, and parameters involving the development and use of forest growth models; emphasizing applications to forest growth projections and management.

428: Wetland Ecology. 0-3-3. Study of wetland characteristics and the ecological processes occurring within wetlands. Wetland delineation, restoration, construction and regulation will also be covered. Also listed as BISC 428.

445: Forest Ecosystem Management. 4-2-3. Preq., junior standing or higher, or consent of instructor. Forest ecosystems of the South, their history, function, components, protection, and management. **(G)**

450: Natural Resource Economics. 0-3-3. Tools for economic decision-making applied to the use and allocation of natural resources associated with agriculture. Costs and benefits of various approaches to natural resource management. **(G)**

455: Intermediate Geographic Information Systems. 4-2-3. Preq., FOR 355 or consent of instructor. Intermediate geographic information systems technology focusing on theoretical, technical, and applied aspects of analytical GIS.

477: Practica/Internship/Cooperative Education in Forestry. 1-9 hours credit (9). (Pass/Fail). Preq., Sophomore standing, 2.0 cumulative GPA, and approval of Forestry Experiential Education Coordinator. On site, supervised, structured work experiences located within a 100 mile radius of Ruston. Application and supervision fee required.

478: Practica/Internship/Cooperative Education in Forestry. 1-9 hours credit (9). (Pass/Fail). Preq., Sophomore standing, 2.0 cumulative GPA, and approval of Forestry Experiential Education Coordinator. On site, supervised, structured work experiences located within a 101-200 mile radius of Ruston. Application and supervision fee required.

479: Practica/Internship/Cooperative Education in Forestry. 1-9 hours credit (9). (Pass/Fail). Preq., Sophomore standing, 2.0 cumulative GPA, and approval of Forestry Experiential Education Coordinator. On site, supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and supervision fee required.

526: Rocky Mountain Forest Resource Management. 4-2-3. Preq., consent of instructor. A study of ponderosa pine and spruce-fir ecosystems with respect to issues unique to the Central Rocky Mountains.

528: Advanced Wetland Ecology. 0-3-3. Study of wetland characteristics and the ecological processes occurring within wetlands. Wetland delineation, restoration, construction and regulation will also be covered. Cross-listed as BISC 528.

FRENCH (FREN)

101: Elementary French. 0-3-3 each. Conversation, reading and grammar.

102: Elementary French. 0-3-3 each. Preq., FREN 101. Conversation, reading and grammar.

201: Intermediate French. 0-3-3 each. Preq., FREN 102 or equivalent. Conversation, reading, grammar and culture.

202: Intermediate French. 0-3-3 each. Preq., FREN 201 or equivalent. Conversation, reading, grammar and culture.

301: French Conversation and Composition. 0-3-3 each. Preq., FREN 202 or permission of department head. Required for major in French.

302: French Conversation and Composition. 0-3-3 each. Preq., FREN 202 or permission of department head. Required for major in French.

304: Survey of French Literature. 0-3-3. Preq., FREN 202 or permission of department head. Required for major in French. A survey of French literature from the Middle Ages.

305: Survey of French Literature. 0-3-3. Preq., FREN 202 or permission of department head. Required for major in French. A survey of French literature from the Middle Ages.

308: French Civilization. 0-3-3. Preq., FREN 202 or permission of department head. Lectures and reading in history, geography, language, arts, general culture of French lands.

390: Francophone Children's Literature. 0-3-3. Preq., FREN 304 or 305 or permission of department head. A study of French-speaking children's stories, songs, rhymes and games.

400: The Drama in France. 0-3-3. Preq., FREN 304 or 305 or permission of department head. A study of the drama in France up to 1914, with reading of selective works.

404: Contemporary French Literature. 0-3-3. Preq., FREN 304 or 305 or permission of department head. A study of French literature from 1914 to the present with reading of selective works.

417: The Novel in French. 0-3-3. Preq., FREN 304 or 305 or permission of department head. A study of the novel in France, with reading of selective works.

428: French Literature in English Translation. 0-3-3 (9). Representative works of French literature from the Middle Ages to the 20th century; repeatable for credit with different course content. May not be counted towards a major or minor in French. Also listed as ENGL 428. **(G)**

450: The French Language. 0-3-3. Preq., 21 hours French or consent of instructor. General characteristics of the language and intense review of grammar.

470: French Phonetics and Oral Reading. 0-3-3. Preq., FREN 301-302 or permission of department head. Required for major in French.

480: Commercial French. 0-3-3. Preq., FREN 450 or consent of instructor. Study of business practices and regulation of France and Canada with emphasis on common commercial forms.

GEOGRAPHY (GEOG)

203: Physical Geography. 0-3-3. Fundamentals of physical and biogeography. Topics include surface and fluvial geomorphology, weather, climate, and biogeography..

205: Cultural Geography. 0-3-3. Discussion of the spatial patterns of the human world; people, their culture, their livelihoods, and their imprints of the landscape.

210: World Regional Geography. 0-3-3. Introduction to place and spatial relationships around the globe, with an emphasis on the developing world.

290: Geography of Popular Culture. 0-3-3. Examines the patterns and processes of American popular culture. Topics include the geography of sports, music, television, movies, and popular architecture.

300: Historical Geography of the United States. 0-3-3. Preq., Sophomores, Juniors, and Seniors. Study of the evolution of the cultural landscape of the United States during the historical period.

307: Geography of the Western United States. 0-3-3. Field and classroom study of the physical and human geography of the western half of the United States.

310: Geography of Louisiana. 0-3-3. Open only to junior, senior and graduate students. The climate, natural regions, and resources of Louisiana; cultural development, sources and distribution of the population; settlements and agriculture.

321: American Landscapes. 0-3-3. Folk, vernacular, and popular landscape items are explored. Special attention is given to developing student's ability to "read" the American landscape as text.

380: Geographic Information Systems (GIS) and Computer Cartography. 0-3-3. Elements of map interpretation and construction; creation, manipulation, and analysis of spatially defined data.

440: Economic Geography. 0-3-3. A spatial perspective is used to examine economic principles. Topics include transportation, retail and industrial site location analysis, and the political/space economy.

470: Urban Geography. 0-3-3. Patterns and processes of large North American cities are examined. Topics covered include urban politics, race, government housing policy, urban revitalization and gentrification.

480: Advanced Geographic Information System and Spatial Analysis. 0-3-3. Preq., GEOG 380 or permission of instructor. Advanced techniques in Geographic Information Systems, integrated with intermediate level spatial analysis.

490: Perspectives on Place and Space. 0-3-3. Preq., GEOG 205 or 290, or permission of instructor. This course introduces advanced students in the social sciences to "new cultural geography" perspectives, critical theory, and cultural studies approaches to place and space.

501: Physical and Cultural Elements of Geography. 0-3-3.

GEOLOGY (GEOL)

111: Physical Geology. 0-3-3. Igneous, sedimentary, and metamorphic rocks; erosion of the earth by streams, oceans, winds, glaciers; phenomena of mountains, volcanoes, earthquakes; and the earth's interior.

112: Historical Geology. 0-3-3. Preq., GEOL 111. History of the earth as revealed in the character and fossil content of rocks.

121: Physical Geology Laboratory. 3-0-1. Preq., registration or credit in GEOL 111. Identification of minerals and rocks. Study of topographic maps and physiographic features shown thereon.

122: Historical Geology Laboratory. 3-0-1. Preq., registration or credit in GEOL 112 and 121. Introduction to fossils, geologic maps, and the geologic history of selected portions of North America.

200: Introduction to Oceanography. 0-3-3. A survey of the oceans; their nature, structure, origin, physical features, circulation, composition, natural resources, and relationship to the atmosphere and solid earth.

201: Physical and Historical Geology of the National Parks. 0-3-3. Physical processes and earth history of the U. S. National Parks. Topics include: rock types, volcanism, plate tectonics, glaciation, shoreline processes, weathering, erosion, and cave formation.

209: Mineralogy. 3-2-3. Preq., GEOL 111, 121, CHEM 102, 103. Crystallography and descriptive mineralogy. Occurrence, associations, and uses of minerals.

211: Petrology. 3-2-3. Preq., GEOL 210. Introduction to the formation and classification of rocks. Identification of rock types in hand specimen and in thin section under the petrographic microscope.

289: Special Topics. 1-4 hours credit. Selected topics in an identified area of geology. May be repeated for credit.

299: Cooperative Education Applications. 40-0-1 (7). Preq., Admission to the College of Engineering and Science Cooperative Education Program.

302: Introduction to Paleoecology. 3-2-3. Preq., GEOL 112, 122. Survey of invertebrate paleontology, phylum Protozoa through phylum Arthropoda. History of the science, rules of nomenclature, and environment of lower animals.

303: Sedimentology 3-2-3. Preq., GEOL 111, 112, 121. Origin, composition, properties and classification of sediments and sedimentary rocks. Fluid flow, sedimentary structures and digenesis.

305: Stratigraphy. 0-3-3. Preq., GEOL 303. Depositional environments, sedimentary facies, correlations, basin analysis and plate tectonics.

315: Structural Geology. 3-2-3. Preq., GEOL 111, 112, 121, MATH 112 or 241, and ENGR 151. The recognition, representation, interpretation, and mechanics of rock deformation.

316: Map Interpretation. 6-0-2. Preq., GEOL 305 and 315. Interpretation of topographic maps, aerial photographs, geologic maps and geologic cross sections.

318: Environmental Geology. 0-3-3. Preq., GEOL 111 or consent of instructor. Discussion of natural and human hazards affecting the environment, including flooding, slope stability, earthquakes, coastal hazards, resource development, water pollution, and waste disposal.

320: Summer Field Course. 6 hours credit. Preq., GEOL 211, 302 and 316, ENGL 303. Course work at the Louisiana Tech Geology Camp.

420: Directed Study of Geologic Problems. 1-3 hrs credit. Preq., senior standing. Special topics within the student's field of interest. Maximum 3 hours credit.

421: Micropaleontology. 3-2-3. Preq., GEOL 302. Study of microfossils used in correlation of well cuttings and outcrop samples, especially foraminifera.

422: Environmental Remediation. 0-3-3. Evaluation of alternative surface and subsurface cleanup technologies with emphasis on site assessments, pilot studies, treatment techniques, and the preparation of corrective action plans. **(G)**

442: Geophysical Methods. 3-2-3. Preq., PHYS 210, GEOL 305, 315, 408, MATH 241. Introduction to the elementary theory, computation fundamentals, and basic field practice for gravity, seismic, magnetic, and electrical methods of geophysical exploration.

450: Seminar. 0-1-1. Preq., senior standing in geology. Written or oral reports in various phases of geology.

460: Hydrogeology. 0-3-3. Preq., GEOL 111, 121, and MATH 220- or 241. Effect of geologic materials and processes on availability and movement of ground water with emphasis on collecting and interpreting hydrogeologic data.

485: Coastal Marine Geology. 8-3-4. Preq., GEOL 111, 121 or 112, 122, CHEM 101, 102, 103, 104. Geomorphological features of estuarine, coastal and continental shelf environments, erosional, depositional and geochemical processes, field and laboratory methods. Five weeks at a Louisiana Universities Marine Consortium coastal laboratory.

GERMAN (GERM)

101: Elementary German. 0-3-3 each. Conversation, reading, and grammar.

102: Elementary German. 0-3-3 each. Preq., GERM 101. Conversation, reading, and grammar.

201: Intermediate German. 0-3-3 each. Preq., GERM 102. Conversation reading, grammar, and culture.

202: Intermediate German. 0-3-3 each. Preq., GERM 201. Conversation reading, grammar, and culture.

301: Survey of German Literature to 1800. 0-3-3. Preq., GERM 202 or permission of department head.

302: Survey of German Literature from 1800. 0-3-3. Preq., GERM 202 or permission of department head.

303: Classical German Literature. 0-3-3. Preq., GERM 202 or permission of department head. A study of German classicism, including Lessing, Goethe, Schiller.

305: Advanced German Grammar. 0-3-3. Preq., GERM 202 or permission of department head.. An intensive course in German grammar with special attention to technical German.

307: German Conversation. 0-3-3. Preq., GERM 202 or permission of department head.

308: German Composition. 0-3-3. Preq., GERM 202 or permission of department head.

309: German Civilization. 0-3-3. Preq., GERM 202 or permission of department head. Lectures and readings in history, geography, language, arts and general culture.

HEALTH AND PHYSICAL EDUCATION (HPE)

Health and Physical Education 100 to 199 activity courses will stress basic techniques, rules and participation.

100: Special Group Activities. 3 3/4-0-1 (2). (Pass/Fail).

101: Flag Football and Basketball. 3 3/4-0-2.

102: Volleyball and Softball. 3 3/4-0-2.

107: Aerobic Running. 3 3/4-0-2. (4).

110: Adapted Physical Education. 3 3/4-0-2. For students not physically able to participate in regular activity courses. Statement from physician listing restrictions is required. (Pass/Fail)

112: Practicum. 3 3/4-0-1 (4). HPE Fitness/Wellness majors. Students assist a master teacher to learn proper methods of teaching aerobic, weight training, senior adult activities.

114: Varsity Sport Participation. 3 3/4-0-2 (6). Credit for varsity participation in a sport. May be repeated for up to 6 hours credit. Will not count for HPE majors/minors.

115: Varsity Sport Participation. 3 3/4-0-2 (6). Credit for varsity participation in a sport. May be repeated for up to 6 hours credit. Will not count for HPE majors/minors.

116: Varsity Sport Participation. 3 3/4-0-2 (6). Credit for varsity participation in a sport. May be repeated for up to 6 hours credit. Will not count for HPE majors/minors.

117: Varsity Sport Participation. 3 3/4-0-2 (6). Credit for varsity participation in a sport. May be repeated for up to 6 hours credit. Will not count for HPE majors/minors.

119: Basketball and Volleyball. 3 3/4-0-2.

132: Beginning Tap Dance. 3 3/4-0-2.

134: Developmental Conditioning. 3 3/4-0-2 (6). Designed to improve and maintain a desirable level of aerobic fitness by various forms of appropriate physical activity.

141: Beginning Golf. 3 3/4-0-2. Learning basic golf skills and rules with limited play for beginning student with no experience.

143: Fencing. 3 3/4-0-2.

145: Social Dance. 3 3/4-0-2.

150: First Aid. 0-2-2. Lectures, discussions, and practical demonstrations of Red Cross methods in First Aid.

161: Square, Folk, and Country/Western Dance. 3 3/4-0-2.

181: Beginning Swimming. 3 3/4-0-2. Open to students who are unable to swim in deep water.

201: Soccer and Volleyball. 2 3/4-1-2.

202: Foundations of Health and Physical Education, Fitness Wellness, and Sports Science. 0-3 3/4-3. Preq., Sophomore Standing. Designed to provide physical education students with information in the professional areas of HPE, Fitness/Wellness, and Sports Science.

206: Fitness for the Senior Adult. 2 3/4-1-3. May be taken by senior adults for repeated credit. Senior adult exercise programs are designed utilizing chair and water exercises, strength machines, and walking.

207: Principles and Practices of Coaching Minor Sports. 0-2-2. Preq., Sophomore standing. Study of minor sports from viewpoint of teacher and coach.

210: Beginning Weight Training. 2 3/4-1-2 (4).

211: Powerlifting. 2 3/4-1-2 (4).

213: Fishing and Boating Safety. 2 3/4-1-2.

214: Hunting and Gun Safety. 2 3/4-1-2.

218: Beginning Karate. 2 3/4-1-2 (4).

221: Light Backpacking. 3-1-2 (6). Equipment selection, maintenance, and use; first aid and accident prevention; and basic skills for light backpacking, plus participation in three off-campus, outdoor activity sessions.

222: Outdoor Adventure. 3-1-2 (6). Equipment selection, maintenance, and use; first aid and accident prevention; and skills for selected outdoor, adventure activities, plus participation in three off-campus, outdoor activity sessions.

231: Beginning Modern Dance. 2 3/4-1-2.

235: Beginning Racquetball. 2 3/4-1-2.

241: Intermediate Golf. 2 3/4-1-2. Review of strokes, rules, and strategies. Tournament play.

250: Gymnastics. 2 3/4-1-2. HPE Majors Only.

251: Materials and Methods in Teaching Elementary School Physical Education. 1-2 3/4-3. Preq., Sophomore standing, HPE majors and minors only. Methods and materials used in teaching elementary school physical education with practical application.

255: Lifetime Sports Series A - Racquet Sports. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques, rules, and strategies in racquet sports.

256: Lifetime Sport Series B - Aerobic Conditioning/Strength Conditioning/Aquatics. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques and physiological principles in aerobic, strength, and aquatic conditioning activities.

257: Lifetime Sport Series C - Selected Recreational Sports. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques, rules, and strategies used in selected recreational sports.

262: Beginning Bowling. 2 3/4-1-2.

263: Intermediate Bowling. 2 3/4-1-2. Preq., HPE 262.

265: Team Sport Series A - Flag Football/Soccer. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques, rules, and strategies in flag football and soccer.

266: Team Sport Series B - Volleyball/Basketball. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques, rules, and strategies in volleyball and basketball.

267: Team Sport Series C - Softball/Track and Field. 2 3/4-1-2. HPE majors/minors only. Emphasis on learning and teaching the fundamental skills/techniques, rules, and strategies in softball and track.

271: Beginning Tennis. 2 3/4-1-2. Learning basic tennis skills, fundamentals, rules, and strategy for beginning players with limited or no experience.

272: Beginning Badminton. 2 3/4-1-2.

274: Intermediate Tennis. 2 3/4-1-2. Preq., HPE 271 or intermediate skill levels. Review of tennis skills, fundamentals, rules, and strategy. Conditioning and class competition.

275: Acrobic Dance and Conditioning. 2-1-2 (4).

280: Dance Appreciation. 0-3-3. An overview of the historical, cultural and social impact of dance. Includes classifications of major dance styles, interpretations of dance and major contributors to dance.

281: Intermediate Swimming. 2 3/4-1-2. Open to students who can swim in deep water. Stroke development and endurance swimming are emphasized.

283: Lifeguard Training. 1 3/4-2-3. Preq., Level V and VI Swimming Skills. American Red Cross Lifeguard Training. Prepares and certifies

individuals to assume the duties and responsibilities of lifeguards at swimming pools and protected (non-surf) open water beaches.

289: Water Exercise for Fitness. 2 3/4-1-2 (6). Individualized program to enhance fitness through aquatic activity.

290: Personal and Community Health. 0-3-3. Designed to develop attitudes and practices which contribute to better individual and group health. Emphasis is placed upon major health problems of early adulthood.

292: Preventive Health and Wellness. 0-3-3. Emphasis on chronic and degenerative diseases, mental health, preventing communicable and non-communicable diseases and the role of physical fitness in preventive health.

293: Consumer and Environmental Health. 0-3-3. Directing the consumer in selection of health services and understanding the effect of environmental pollution.

294: The School Health Program. 0-3-3. A study of the administration and organization of a school health program. Emphasis on establishing such a program and utilization of available resources in school health.

300: Safety Education. 0-3-3. The social, emotional, economic, and legal impact of safety and accidents in the home, at work, and in leisure/sports activities.

301: Curriculum Innovations, Instructional Devices and Lab Instruction in Drivers Education. 3 3/4-3-4. In-depth study of curriculum materials and instructional devices and techniques including Simulation, Multimedia Driving Range, On-Street instruction, and Motorcycle.

305: Materials and Methods in Health Education in Schools. 0-3-3. Preq., HPE 290, 292, 293 and Upper Division. Includes information relative to school health education program with emphasis on methods of instruction and use of materials in schools.

306: Principles and Practices of Football Coaching. 0-2-2. Preq., sophomore standing. Designed to familiarize the student with various defensive and offensive systems that contribute to a successful program.

307: Principles and Practices of Coaching Softball. 1-2 1/2-2. Preq., Sophomore standing. Emphasis on coaching competitive softball. Fundamental skills of offense and defense, training principles, scouting, strategy, and organization of practice are stressed.

308: Principles and Practices of Coaching Baseball. 0-2-2. Preq., sophomore standing. Emphasis on coaching competitive baseball. Fundamental skills of offense and defense, training principles, scouting, strategies, and organization of practice are stressed.

312: Principles and Practices of Basketball Coaching. 0-2-2. Preq., sophomore standing. Fundamentals of team offense and defense. Training and practice; scouting and strategy; officiating.

313: Principles and Practices of Volleyball Coaching. 0-2-2. Preq., sophomore standing. Fundamentals of team offense and defense. Training and practice; scouting and strategy; officiating.

314: Principles and Practices of Track and Field Coaching. 0-2-2. Preq., sophomore standing. Fundamental movements involved in the different events: staffing for the different events; training and practice; officiating.

316: Exercise and Sport Psychology. 3 3/4-0-3. Preq., junior standing, Upper Division. Psychological aspects of exercise and sport with emphasis on mental preparation for athletic performance.

326: Applied Anatomy and Kinesiology. 0-3-3. Preq., junior standing, BISC 224, Upper Division. Analysis of movement based on a knowledge of anatomy and physiology as applied to the function of body mechanics.

340: Materials and Methods in Physical Education and Health Education for Elementary Schools. 5-3-3. Preq., Upper Division. To prepare the teacher for the direction of children in physical education and for developing in children desirable knowledge, skills and attitudes in health.

350: Drugs and Sport. 1-3 3/4-3. Preq., HPE majors or intercollegiate athletes. Develop a knowledge of drugs, effects, sound use, preventive drug abuse, effective programs for drug education and athletes.

383: Water Safety Instructor. 1 3/4-2-3. Preq., HPE 281 or Level V, VI, and VII Swimming Skills. Certifies instructor candidates to teach water safety and swimming courses.

401: Recreation and Leisure for the Older Adult. 0-3-3. Recreation and leisure in an aging society. Leadership, programming, and activities for older adults. Emphasis on programs in a variety of settings.

402: Measurement and Evaluation in Health and Physical Education. 0-2 1/2-2. Preq., senior standing, Upper division. Designed to familiarize the physical educator with statistical methods, measurement of physical parameters, and procedures for effective written and skill test construction and evaluation.

405: Sports Medicine and First Aid. 0-2-2. Preq., upper division. Prevention, treatment and rehabilitation of athletic injuries and first aid procedures.

406: Health Aspects of Aging. 0-3-3. Preq., upper division. Provides an understanding of the health aspects of aging as it pertains to the biological, physiological, psychological, and sociological factors in mature adults. **(G)**

407: Exercise Prescription. 2-2-3. Preq., upper division. Provides an understanding of individualized exercise prescription design in programs to develop and maintain physical fitness through testing and re-evaluation strategies. **(G)**

408: Physiology of Exercise. 2-2-3. Preq., upper division. Basic human physiology with emphasis on the physiological changes and residues of exercise. Concurrent with HPE 409.

409: Measurement of Physiology Variables. 2 1/2-0-1. Concurrent with HPE 408, upper division. Exercise physiology laboratory experience providing students with an opportunity to measure and evaluate selected physiological parameters.

410: The Designing, Building, and Maintenance of Sport and Physical Fitness Facilities. 0-3-3. Preq., upper division. The equipping, designing, building, and maintenance of physical fitness and sports facilities. **(G)**

414: Introducing Adapted Physical Education. 0-3-3. Preq., Upper Division. To familiarize the student with the role of adapted physical education and the physical, emotional, social and learning characteristics of exceptional children. **(G)**

415: Internship. 15-3-6. Consent of department head and within two quarters of graduation. Requires 180 clock hours in practical experiences in approved programs with department approved supervisor.

416: Adult Fitness Programming. 2 1/2-1-3. Preq., HPE 406, upper division. Course is designed to instruct individuals in implementation of fitness programs and management of the various facilities, which include fitness management. **(G)**

417: Motor Development, Health Processes, and Safety Procedures in Education of the Disabled. 0-3-3. Emphasis on motor development and knowledge of basic health processes and safety procedures needed to work effectively with children and adults having serious disabling conditions.

418: Strength and Conditioning for Improved Performance. 3 3/4-0-3. Preq., HPE 326, 407, 408, 409, upper division. Procedures to strengthen and condition individuals in aerobic and anaerobic activities. Exercise models, performance evaluations, exercise equipment, training ethics, and professional development are discussed. **(G)**

433: Special Problems in Health and Physical Education. 1-3 hour(s) credit (9). Consent of Department Head. Designed for selected problems in Health and Physical Education.

457: Materials and Methods in Teaching Middle and Secondary School Physical Education. 1-2 3/4-3. Preq., HPE 251, upper division-senior standing. Methods and materials used in teaching middle and secondary schools physical education with practical application. **(G)**

509: Tests and Measurement. 0-3-3. Using current research to select the best procedures to measure and test the student's physical fitness, motor ability, sports skills, and cognitive knowledge.

515: Internship. 15-3-6. Requires 220 to 240 clock hours in departmentally approved practical experiences in rehabilitation, corporate, community, educational, athletics, medical, or fitness/wellness programs.

516: Education for Physical Fitness. 0-3-3. Factors involved in developing, maintaining and evaluating physical fitness. Emphasis is placed on individual exercise programs, cardiovascular risk factors, and the beneficial effects of exercise.

518: Recent Literature and Research in Physical Education, Physical Fitness and Wellness. 0-3-3. Review and evaluation of reports of recent research in physical education. Review of research methodology for analysis of both qualitative and quantitative nature.

519: Alcohol and Narcotics Education. 0-3-3. Research and evaluation of the effects of alcohol and narcotics.

520: Motor Development and Learning. 0-3-3. Nature of motor learning and development, factors affecting success in skill learning and improving physical performance.

521: Behavior Impairment and Physical Education. 0-2-2. Preq., HPE 414. Physical education for the severely disabled. Course focuses on disabled individuals with implications for teaching motor activities.

522: Observing and Teaching in Adapted Physical Education with the Behavior Impaired. 3-0-1. Preq., Concurrent with 521. Practicum in physical education for the severely disabled.

523: Chronic Disability and Physical Education. 0-2-2. Focus is on individuals with chronic and permanent physical disabilities, which affect motor performance with implications for selection of activities in physical education.

524: Observing and Teaching in Adapted Physical Education with the Chronically Disabled. 3-0-1. Preq., Concurrent with HPE 523. Practicum in physical education for the chronically and permanently disabled.

526: Physiology of Exercise. 0-3-3. Understanding the physiological responses of the body systems to exercise, the recovery process, and systematic training regimens.

529: Curriculum Construction in Physical Education. 0-3-3. Basic principles of curriculum construction in the junior high and high school with special emphasis on current trends.

531: Physical Education Curriculum for the Handicapped. 0-3-3. Needs of the physically and mentally handicapped as related to the physical education program. Study of specific activities, methods and evaluation.

532: Interscholastic Athletics. 0-3-3. Prepares the interscholastic coach to understand the purposes of state and national athletic associations, legal issues in sports, and the administration of athletic programs.

533: Problems in Health, Physical Education, Recreation and Athletics. 1-3 hour(s) credit (6). Consent of Department Head. Credit depends on the nature of the problem and work to be accomplished.

534: Mechanical Analysis of Motor Skills. 0-3-3. Analysis of the various motor skills to determine their relationship to basic mechanical principles, anatomical and kinesiological factors, laws of physics, etc.

536: Physiology of Exercise II. 0-3-3. Preq., HPE 526. A continuation of HPE 526 designed to enhance understanding of physiological responses to acute and chronic exercise as it relates to performance and health-related fitness.

539: Sports Psychology. 0-3-3. Course designed to explore the behavior of individuals participating in play, game and sports.

540: Sport Impact on Society. 0-3-3. The impact of sports upon the American culture with focus on competition, economics, mythology, race relations and the Olympic syndrome.

543: Physical Education and Sport Pedagogy. 0-3-3. The study of the research on teaching, teacher education, and curriculum in physical education and sport.

544: Drug Abuse Prevention. 0-3-3. Major drugs of abuse and the available alternatives to individuals involved in this behavior, particularly during pre-adolescence.

545: Health Promotion and Wellness. 0-3-3. A multi-level approach toward implementing preventive health programs in school and organizational settings with emphasis on stress management, smoking cessation, and injury prevention.

549: Advanced Theory of Sports, Games, and Athletics. 1-3 hours credit (3). Consent of instructor. Advanced theory of various sports, games, and athletics will be explored and analyzed.

550: Current Trends and Issues in Health, Physical Education, and Sport. 0-3-3. A survey of recent literature and research to determine current trends and issues in health, physical education, and sports.

HEALTH INFORMATION MANAGEMENT (HIM)

103: Introduction to Medical Terminology. 0-3-3. A basic study of the language of medicine including word construction, definition and use of terms and an elementary study of the human anatomy, structures and functions with medical terminology application.

107: Introduction to Health Information Management. 0-3-3. Preq. or Coreq, HIM 103. An introduction to the field of Health Information Management (HIM), professional ethics, and the basic functions of the HIM department.

108: Laboratory Practice in Basic Health Information Management Procedures. 3-0-1. Preq. or Coreq., HIM 107. An introduction to applications of modern technology and software for admissions, deficiency analysis, chart assembly, data retrieval and data storage.

115: Healthcare Delivery Systems. 0-3-3. Preq. Minimum grade of "C" in HIM 107. An introduction to organization, financing, and delivery of health care services including accreditation standards, licensure, and regulatory agencies.

120: Health Records Professional Practice. 3-0-1. Preq., Minimum grade of "C" in HIM 107, 108, and 115. Health records in hospitals, nursing homes, hospice, tumor registry, home health, mental health, and specialty hospitals.

200: Health Statistics. 0-2-2. Preq., minimum grade of "C" in MATH 101, and HIM 107. Computation, presentation, and computer application of commonly reported healthcare statistics; vital statistics; and introduction to data collection methods, analysis, and presentation.

204: Medical Transcription. 3-1-2. Preq., a minimum grade of "C" in HIM 103. Introduction to transcription of record forms and supervision of the medical transcription function.

207: Coding and Classifying Diseases and Procedures. 0-3-3. Preq. HIM 280. Basic coding using the latest edition of the International Classification of Diseases.

208: Laboratory Practice in Coding. 3-0-1. Coreq., HIM 207. Practical application and laboratory practice in coding using ICD-9-CM.

217: Healthcare Reimbursement. 0-3-3. Preq., or Coreq., HIM 218 and 219. A study of systems used for professional and institutional reimbursement in various healthcare settings.

218: Intermediate Coding/Classification Systems. 0-3-3. Preq., Minimum grade of "C" in HIM 207 and 208. Other classifications, nomenclatures, and medical vocabularies. Application of coding principles as they affect reimbursement, the prospective payment system, and ethical issues related to reimbursement.

219: Intermediate Coding Laboratory. 3-0-1. Coreq., HIM 218. Practice in coding inpatient and outpatient records, case-mix analysis, and PPS reimbursement methods.

224: Continuous Quality Improvement, Risk Management, and Utilization Review. 0-3-3. Preq. Minimum grade of "C" in HIM 107. Techniques of continuous quality improvement, utilization review, risk management, and case management.

226: Legal Aspects of Health Information Management. 0-2-2. Preq. HIM 107. A study of the principles of law as applied to the health field and medical record practice.

228: Health Information Services. 0-2-2. Preq. HIM 115, 224 and MGMT 201 or 310. Application of supervisory techniques to health information services.

229: Introduction to Health Information Technology. 0-2-2. Preq., HIM 107. Concepts of computer technology related to healthcare and the tools and techniques for collecting, storing, and retrieving healthcare data.

234: Quality Improvement Laboratory. 3-0-1. Preq., HIM 115, and 224. Practical application of healthcare statistics, quality assessment tools, and accreditation standards.

235: Advanced Coding Laboratory. 6-0-2. Preq., Minimum of 2.25 GPA in the HIT curriculum. Coreq., HIM 277, 278, or 279. All other HIT course work must be complete. Intensive study of the principles of various coding systems through practical application.

277: Practica/Internship/Cooperative Education in Health Information Management. 40-0-6. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located within a 100-mile radius of Ruston. Application and supervision fee required

278: Practica/Internship/Cooperative Education in Health Information Management. 40-0-6. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located within a 101-200 mile radius of Ruston. Application and supervision fee required

279: Practica/Internship/Cooperative Education in Health Information Management. 40-0-6. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and supervision fee required

280: Introduction to Medical Science. 0-3-3. Preq., BISC 225 and 227, and minimum grade of "C" in HIM 103. A study of the nature and cause of disease.

299: Special Problems. 1-4 semester credit hours. Preq., consent of instructor. Selected topics in an identified area of study in Health Information Management.

312: Health Data Content & Structure. 0-3-3. Preq., Jr. standing. Introduction to health information systems with an emphasis on healthcare vocabulary, standards and models, and on the computer-based patient record.

318: Data Management in Healthcare. 0-3-3. Preq., HIM 312. Techniques employed to manage health data using computers.

319: Data Management in Healthcare Laboratory. 3-0-1. Preq., HIM 312. Coreq., HIM 318. Practical application of data management techniques in healthcare.

330: Systems Analysis In Healthcare. 0-3-3. Preq., HIM 312. Study of the clinical and business information applications in health care. Concepts, techniques, and tools associated with the systems development life cycle are included.

417: Healthcare Research. 0-3-3. Preq., HIM 430 and Coreq. QA 233. An introduction to the application of the scientific method and research design to health information management.

418: Healthcare Research Laboratory. 3-0-1. Preq. or Coreq., HIM 417. Practice in abstracting medical information from healthcare records, designing data collection instruments, statistical analysis, and basic research methods used for health services and clinical research.

425: Information Systems in Healthcare. 0-2-2. Preq., HIM 330, HIM 318 and 319. Design, development, and implementation of health information systems.

430: Health Information Management. 0-3-3. Preq., MGMT 310, 470, and a minimum grade of "C" in all HIM 100- and 200-level courses in curriculum. Management principles applied to the administration of health information systems.

431: Laboratory Practice in Administration of the Health Information System. 3-0-1. Preq. or Coreq., HIM 430. Laboratory practice using evaluation procedures to assist in problem-solving and decision-making.

477: Practica/Internship/Cooperative Education in Health Information Management. 40-0-8. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located within a 100-mile radius of Ruston. Application and supervision fee required

478: Practica/Internship/Cooperative Education in Health Information Management. 40-0-8. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located within a 101-200 mile radius of Ruston. Application and supervision fee required

479: Practica/Internship/Cooperative Education in Health Information Management. 40-0-8. Preq., Minimum of 2.25 GPA in curriculum and course work complete. Scheduled in the quarter of graduation. On site, supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and supervision fee required

499: Special Problems: 1-4 semester credit hours. Preq., Junior standing and consent of the instructor. Selected topics in an identified advanced area of study in Health Information Management.

HISTORY (HIST)

HIST 101 and 102 are normally regarded as prerequisites for advanced non-American history courses. HIST 201 and 202 are normally regarded as prerequisites for advanced American history courses. Exceptions can be made with permission of the department head.

101: World History to 1500. 0-3-3. A survey of civilization of the world to 1500. Major emphasis on Western Civilization.

102: World History since 1500. 0-3-3. A survey of civilization of the world since 1500. Major emphasis on Western Civilizations.

103: Foundations of Ancient Civilization. 0-3-3. Interdisciplinary study of major works of ancient Greek and Roman civilization. For HONORS Program students only. Satisfies course work in HIST 101. Also listed as ENGL 103.

104: Foundations of Medieval and Renaissance Civilization. 0-3-3. Interdisciplinary study of major works of Medieval and Renaissance civilization. For HONORS Program students only. Satisfies course work in HIST 102. Also listed as ENGL 104.

201: History of the United States, 1492-1877. 0-3-3. A survey of American history from discovery through Reconstruction.

202: History of the United States, 1877 to the Present. 0-3-3. A survey of American history from Reconstruction to the present.

203: Foundations of Modern Civilization. 0-3-3. Interdisciplinary study of major works of modern civilization. For HONORS Program students only. Satisfies course work in HIST 102. Also listed as ENGL 203.

204: Foundations of American Civilization. 0-3-3. Interdisciplinary study of major works of modern civilization. For HONORS Program students only. Satisfies course work in HIST 201 or202. Also listed as ENGL 204.

333: History of Rome. 0-3-3. A survey of the political, economic, social, and cultural history of Rome from earliest beginnings through the fifth century AD.

360: History of Louisiana. 0-3-3. A study of Louisiana history from early explorations to the present.

395: Junior Seminar in History. 0-3-3 (6). Introduction to the sources and methods of historical inquiry through in-depth group study of a specific topic, problem, or era. May be repeated for credit as topic changes.

402: History of American Foreign Policy. 0-3-3. A study of the development and expansion of American foreign policy from colonial beginnings to the present. **(G)**

403: History of England to 1688. 0-3-3. A study of the development of the English people from the earliest times to the accession of William and Mary. **(G)**

404: History of England since 1688. 0-3-3. A study of English political, social, and economic institutions and policies in the eighteenth, nineteenth, and twentieth centuries. **(G)**

408: Hitler's Germany. 0-3-3. A study of German history since 1862 with special emphasis on the rise and impact of Adolph Hitler and National Socialism. **(G)**

410: History of Modern Russia. 0-3-3. A survey of Russian history with special emphasis on twentieth century developments.

413: Medieval Europe. 0-3-3. A survey of Europe from the decline of Rome to the advent of the Renaissance. **(G)**

414: Renaissance and Reformation. 0-3-3. A study of the political, economic, and cultural evolution of Europe from 1300 to 1648. **(G)**

415: History of the Christian Church. 0-3-3. A study of the rise and expansion of the Christian Church and its enormous influence on world history. **(G)**

418: Europe in the Era of the French Revolution and Napoleon. 0-3-3. A study of early modern Europe during the transition from the aristocratic era of the Old Regime to the Age of Revolutions. **(G)**

419: Nineteenth Century Europe. 0-3-3. A survey of political, economic, and cultural developments in Europe from the defeat of Napoleon I to the outbreak of World War I. **(G)**

420: Twentieth Century Europe. 0-3-3. A survey of political, economic, and cultural developments in Europe since the outbreak of World War I. **(G)**

423: The Civil War and Reconstruction. 0-3-3. A study of American history from the beginning of the Civil War to 1877. **(G)**

430: History of the Ancient Near East. 0-3-3. A survey of the civilizations of the Near East from earliest beginnings to 330 B. C. **(G)**

431: History of Greece. 0-3-3. A political, economic, social, and cultural study of Greek history from earliest beginnings through the Hellenistic era. **(G)**

432: The Roman Republic. 0-3-3. A study of the political, cultural, economic, and social history of Rome from earliest beginnings to the end of the Republic. **(G)**

433: The Roman Empire. 0-3-3. A study of the political, cultural, economic, and social history of Rome during the period of the Empire. **(G)**

436: History of the Modern Near East. 0-3-3. A history of the Arabic world from the fifteenth century to the present. **(G)**

440: History of Latin America to 1824. 0-3-3. A survey of Latin American history from European and Indian backgrounds to 1824. **(G)**

441: History of Latin America since 1824. 0-3-3. A survey of political, economic and social developments in Latin America since 1824. **(G)**

442: History of Mexico. 0-3-3. A survey of the political, economic, and social evolution of the Mexican nation from its Indian origins to the present. **(G)**

444: History of Central America and the Caribbean. 0-3-3. The history of Central America and the islands of the Caribbean from 1492 to the present, with emphasis on the historical roots of contemporary problems. **(G)**

447: History of China. 0-3-3. Traces the development of Chinese civilization from its earliest origins to the present.

450: History of the Old South. 0-3-3. A study of the political, economic, and social development of the antebellum South. **(G)**

451: History of the New South. 0-3-3. A survey of the major topics of the history of the American South from Reconstruction to the present day. **(G)**

465: Early 20th Century America. 0-3-3. A study of the social, political and economic development of the United States from 1900 to the end of the New Deal. **(G)**

466: Contemporary America. 0-3-3. An examination of United States history from World War II to 1960, emphasizing the expansion of America's role in world affairs.

467: Vietnam, Watergate and After: America, 1960 to the Present. 0-3-3. An intensive study of United States history from the troubled 60's to the present. **(G)**

472: History of American Ideas. 0-3-3. A survey of the major forces and ideas that have shaped American history. **(G)**

474: The American Frontier. 0-3-3. A study of the American frontier from the colonial period to 1890, with special emphasis on social and economic growth. **(G)**

475: Women in American History. 0-3-3. A study of women's contributions to American history with special emphasis on the role of women in contemporary society. **(G)**

478: African-American History. 0-3-3. A survey of how African Americans have contributed to US history and culture from 1500 to the present. **(G)**

480: History of Science. 0-3-3. Preq., advanced history courses and six hours of science. A descriptive survey of the history of science and its civilizational implications. **(G)**

481: The British Empire. 0-3-3. A study of the rise and fall of the British Empire, with primary emphasis on South Africa, India, Canada, Australia, and New Zealand.

483: The Intellectual and Cultural History of the Western World from the Hellenic Era to the End of the Middle Ages. 0-3-3. A survey of the philosophical, cultural, religious, scientific, artistic, and literary thought and achievement of western man from the Greeks to the beginning of the Renaissance. **(G)**

484: The Intellectual and Cultural History of the Western World in Modern Times. 0-3-3. A survey of the philosophical, cultural, religious, scientific, artistic, and literary thought and achievement of western man from the Renaissance to the present. **(G)**

486: Introduction to Public History. 0-3-3. Theoretical, practical, and career issues related to the practice of history in public venues, including museums, historical sites, and similar professional environments. **(G)**

490: Selected Topics in History. 0-3-3 (6). Readings, discussions, and lectures in an area of current interest in the discipline of history, with topic designated by instructor. May be repeated for credit as topic changes. **(G)**

495: Senior Seminar in History. 0-3-3 (6). Advanced consideration of the sources and methods of historical inquiry through in-depth group study of a specific topic, problem, or era. May be repeated for credit as topic changes.

505: Introduction to Historical Research and Writing. 0-3-3. Lectures, readings, discussions, and practical exercises on the sources and methods of professional historical scholarship, with students producing papers based on original research.

506: Seminar in American History, to 1877. 0-3-3 (6). Intensive study of a restricted topic in American history, to 1877 (excluding the American Civil War), with topic designated by instructor. May be repeated for credit as topic changes.

507: Seminar in American History, Since 1877. 0-3-3 (6). Intensive study of a restricted topic in American history, since 1877, with topic designated by instructor. May be repeated for credit as topic changes.

510: Independent Study and Research. 3 hours credit. Independent reading and research in selected history topics.

515: Seminar in Louisiana History. 0-3-3. Selected reading and research in Louisiana History, with particular emphasis on the twentieth century.

516: Seminar in Southern History, to 1860. 0-3-3 (6). Intensive study of a restricted topic in the history of the American South, to 1860, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ Tech.

517: Seminar on the American Civil War. 0-3-3. Lectures, readings, discussion, and research on the history of the American Civil War. Collaborative: transmission originates @ ULM.

518: Seminar in Southern History, Since 1860. 0-3-3 (6). Intensive study of a restricted topic in the history of the American South, since 1860 (excluding the American Civil War), with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ ULM.

526: Seminar in American Civilization. 0-3-3 (6). Intensive study of a restricted topic in the social, cultural, and intellectual history of the United States, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ ULM.

528: Seminar on American Foreign Relations. 0-3-3 (6). Intensive study of a restricted topic in the diplomatic history of the United States, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ Tech.

530: Seminar in Ancient History. 0-3-3. Selected reading and research topics in Ancient History.

535: Seminar in Medieval History. 0-3-3. Selected reading and research topics in Medieval History.

540: Recent European History. 0-3-3. An intensive study of a restricted subject in recent history (to be chosen by the instructor), with an introduction to scholarly research in this field.

543: Seminar in Latin American History. 0-3-3. Lectures, reading and research on selected topic in Latin American history.

545: Seminar in Near East History. 3 hours credit. Independent study, research, and writing in Near East History, with an introduction to scholarly research in this field.

548: Seminar in East Asian History. 0-3-3. Selected reading and research topics in East Asian History.

551: European Traditions, to 1650. 0-3-3 (6). Intensive study of a topic in the history of Western civilization and culture, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ Tech.

552: European Traditions, Since 1650. 0-3-3 (6). Intensive study of a topic in the history of Western civilization and culture, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ ULM.

560: Seminar in Military History. 0-3-3 (6). Intensive study of a topic in the history of military institutions, wars, and warfare, with topic designated by instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ ULM.

580: Seminar in the History of Science & Technology. 0-3-3 (6). Intensive study of a topic in the history of science and technology, with topic designated by the instructor. May be repeated for credit as topic changes. Collaborative: transmission originates @ Tech.

595: Current Problems in History. 0-3-3 (6). Intensive study of an issue, question, topic, or debate of current interest in the historical profession. May be repeated for credit as topic changes.

HUMAN ECOLOGY (HEC)

Courses in the School of Human Ecology are also listed under: Family and Child Studies, Food and Nutrition, and Merchandising and Consumer Studies.

127: Orientation. 0-1-1 Introduction to roles and responsibilities of College students as preparation for professional careers.

267: Practica in Human Ecology. 1-3 hours credit (3). (Pass/Fail). Preq., Consent of director of practica. Structured experiences in specialized areas of human ecology. Application required.

327: Professional Communication and Media Planning in Human Ecology. 6-1-3. Preq., SPCH 110 or consent of instructor. Application of oral and written communication techniques and skills in promotion of products and services for a variety of publics.

398: Seminar in Human Ecology. 0-1-1. A study of the diverse field of human ecology, including historical perspective, theoretical framework, career opportunities, and current and future trends.

405: Family and Consumer Sciences Methods. 0-3-3. An understanding of the family and consumer sciences education programs with emphasis on philosophy, principles and methods of teaching in family and consumer sciences areas.

406: Special Problems in Human Ecology. 1-3 hours credit (12). Special offerings selected by student with approval of adviser. May be repeated for credit with Dean's permission. **(G)**

415: Seminar in Family and Consumer Sciences Student Teaching. 0-1-1. Coreq., EDUC 416. Investigation, analysis, and discussion of current problems, philosophy, and trends in family and consumer sciences education.

457: Issues in Professional Employment. 0-1-1. Preparation to assume professional roles in the field of human ecology. Designed to be taken one or two quarters prior to graduation.

467: Professional Practica in Human Ecology. 1-3 hours credit (6). (Pass/Fail). Preq., consent of instructor or director of practica. Structured experiences in specialized areas of human ecology. Application required.

477: Practica/Internship/Cooperative Education in Human Ecology. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located within a 100-mile radius of Ruston. Application and supervision fee required.

478: Practica/Internship/Cooperative Education in Human Ecology. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located within 101-200 mile radius of Ruston. Application and program fee required.

479: Practica/Internship/Cooperative Education in Human Ecology. 1-6 hours credit (9). (Pass/Fail). On site, supervised, structured work experiences located beyond a 201-mile radius of Ruston. Application and program fee required.

504: Methodology in Human Ecology Research. 0-3-3. Techniques and principles of design for experimental and educational research.

505: Family, Consumer Sciences, and Early Childhood Education Supervision. 0-3-3. The value of supervision with emphasis on responsibilities and techniques desirable for effective working relationships with student teachers.

506: Special Problems in Human Ecology. 1-3 hours credit (12). Multi-quarter project Preq. or Coreq., HEC 504 or Statistics. Directed study of adviser approved topics. May be repeated for credit with Dean's permission.

507: Graduate Seminar. 0-1-1 (3). Seminar designed to increase effectiveness of professional written and oral communications, as well as increase knowledge of research.

515: Applied and Natural Sciences Teaching Practicum. 10-1-3. Principles and techniques in teaching a specific area of applied and natural sciences at the post secondary level. Students work with faculty and undergraduate courses in area of specialty. Application required.

546: Microcomputer Applications in Professional Practice. 0-3-3. Preq., one graduate-level statistics course, and M&CS 246 or satisfactory score on computer competency exam. Use of software programs in professional and research settings.

551: Research and Thesis. 3 hours credit or multiples thereof. Maximum credit is 6 hours. Preq. or Coreq., HEC 504 and Statistics.

567: Advanced Practice in Human Ecology. 15-0-3. Preq., graduate student in Human Ecology. Advanced practice experiences enabling students to apply theory in practice settings.

INDEPENDENT STUDY (ISTY)

498: Readings and Research. 1-3 (6) hours credit. Preq., admission to Independent Study program. Departmental course for independent research and reading. Offered by each department in the College of Liberal Arts.

499: Readings and Research. 1-3 (6) hours credit. Preq., admission to Independent Study program. Departmental course for independent research and reading. Offered by each department in the College of Liberal Arts.

INDUSTRIAL ENGINEERING (INEN)

100: Introduction to Industrial Engineering. 3-0-1. Survey of topics to introduce the student to the profession, the program, and the curriculum.

101: Computers in Engineering. 0-3-3. Functional characteristics of computers and the Internet; overview of programming languages and systems; HTML and JAVA applications; analysis and solution of engineering problems.

201: Industrial and Systems Engineering. 0-3-3. Preq., sophomore standing. An overview of the application of engineering analysis and design principles to industrial and human activity systems.

300: Engineering Economics. 0-2-2. Economic analysis of engineering design alternatives; present, annual, and future worth; internal rate of return and benefit/cost analysis; depreciation and tax consequences; equipment replacement.

301: Industrial Cost Analysis. 0-2-2. Accounting, budgeting, and control of manufacturing costs.

400: Engineering Statistics I. 0-3-3. Preq., MATH 242. Application of probability and distribution theory to various branches of engineering. Confidence intervals, hypothesis testing.

401: Engineering Statistics II. 0-3-3. Preq., INEN 400. Regression analysis, analysis of variances, quality control.

402: Introduction to Operations Research. 0-3-3. Coreq. INEN 400. Linear programming, dynamic programming, project scheduling, network flow, inventory control.

404: Operations Research. 0-3-3. Preq., INEN 400, 402. Industrial engineering applications of queuing theory, critical path methods, project evaluation review technique (PERT), game theory, and inventory systems.

405: Industrial Scheduling. 0-3-3. Techniques for scheduling machines, jobs, personnel, and material in industrial environment.

406: Computer Applications in Production Systems. 0-3-3. Preq., INEN 402. The planning, analysis, and control of production systems. Emphasis is upon high volume discrete production and flexible manufacturing systems.

407: Simulation. 0-3-3. Preq., INEN 400, 404. Discrete simulation methodology, emphasizing statistical basis for simulation modeling and modeling experimentation. Use of simulation modeling language to illustrate model architecture, inference, and optimization.

408: Manufacturing Facilities Planning. 0-3-3. Preq., MEEN 321. Detail planning for facilities location, product development, equipment and manpower requirements, production line analysis, assembly line balancing.

409: Work Design. 3-2-3. Preq., MEEN 321, INEN 400. Methods engineering, work measurement, production standards, workplace analysis and design, ergonomics.

410: Manufacturing Systems Management. 0-3-3. Preq., INEN 400. Operations planning and productivity enhancement techniques for efficient management of manufacturing systems. This course will emphasize capacity planning, materials management, inventory control and warehousing.

411: Industrial Engineering Design I. 0-2-2. Preq., INEN 405, 407, 408, 409, 410, or consent of program chair. Open-ended design problem using industrial engineering skills including work measurement, human factors, quality control, facilities planning, plant layout, operations research, etc.

412: Industrial Engineering Design II. 0-2-2. Preq., INEN 411. Continuation of INEN 411.

413: Industrial Robotics and Automated Manufacturing. 3-2-3. Background, structure, drive systems, effectors and the applications of robots in industrial systems.

424: Seminar. 0-1-1. Instruction and practice in conference-type discussions of technical and professional matters of interest to industrial engineers.

425: Industrial Safety. 0-3-3. Principles of domestic and industrial safety.

450: Special Problems. 1-3 hours credit. Selected topics of current interest in Industrial Engineering not covered in other courses.

490: Applications of Artificial Intelligence and Expert Systems in Mechanical and Industrial Engineering. 3-2-3. Introduction to artificial intelligence, expert systems and their applications in industrial, mechanical and manufacturing engineering systems. **(G)**

499: Technical Enrichment Course. 3-0-1. Pass/Fail. Varying new technologies. Does not count towards graduation in Industrial Engineering. Contact the program chair for more information.

502: Operations Research. 0-3-3. Applications of linear programming to industrial systems, such as production and inventory control. Sensitivity analysis. Transportation and transshipment algorithms. Parametric linear programming. Convex and integer programming.

504: Systems Simulation. 0-3-3. The use of digital computer programs to simulate the operating characteristics of complex systems. Statistical considerations in sampling from a simulated process.

506: Dynamic Programming. 0-3-3. The principles of optimality. One- and two-dimensional processes Markovian decision processes. Lagrange multiplier technique.

507: Engineering Administration. 0-3-3. Organization of the engineering function. Measurement and evaluation of engineering activities. Project management and control. Development of engineering managers.

508: Human Factors in Engineering Systems. 3-2-3. Testing and instrumentation of human response to environmental conditions. Designing equipment, work place and work environment for economy and effectiveness of human work systems.

509: Advanced Engineering Economy. 0-3-3. Effect of income tax on decision making. Retirement and replacement analysis. Capital management. Elements of economic measurement, analysis and forecasting in the face of uncertainty.

510: Advanced Work Measurement. 3-2-3. Advanced methods improvement and work measurement techniques. Design of complex work systems. Work sampling, construction of standard data and mathematical models of work systems.

512: Reliability Engineering. 0-3-3. Application of statistical theory in engineering design. Testing methods for determining reliability. Design of components and assemblies for reliability.

513: Inventory Control. 0-3-3. Analytical methods of determining reorder size and minimum points of various inventory system. Mathematical models with restrictions and quantity discount. Forecasting techniques and production smoothing.

514: Industrial Statistics. 0-3-3. Application of statistical techniques to industrial problems, relationships between experimental measurements using regression, correlation theories and analysis of variance models.

516: Production Planning and Sequencing. 0-3-3. Advanced methods in production planning. Sequencing criteria and algorithms. Job shop and flow shop sequencing. Computer application and simulation.

521: Methods of Optimization. 0-3-3. District elimination methods of sequential search, even-block search, Fibonacci search and golden section and odd-block search. Pattern search, gradient method and geometric programming.

530: Advanced Topics in Manufacturing Automation and Robotics. 3-2-3. Advanced issues in the strategic approach to product design and manufacturing systems design. Integration of islands of automation. Product design for automation.

550: Special Problems. 1-4 hour(s) credit. Advanced problems in industrial engineering.

551: Research and Thesis in Industrial Engineering. Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem; technical literature survey required; development of engineering research literature.

557: Special Topics: Industrial Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of industrial engineering. May be repeated as topics change.

INTERIOR DESIGN (IDES)

250: Introduction to Interior Design. 0-2-2. Introductory examination of Interior Design with topical investigations into the process of design, design elements, lighting, color, surface treatments, and space planning.

352: Interior Design I. 6-1-3. Coreq., IDES 350. Studio problems in the space planning and design of interior environments, emphasis on design methodology, materials, furnishing systems, detail drawing and presentation.

353: Interior Design II. 6-1-3. Preq., IDES 352. Continuation of IDES 352. Studio problems in the space planning and design of interior environments, emphasis on design methodology, materials, furnishing systems, detail drawing and presentation.

354: Interior Design III. 6-1-3. Preq., IDES 353. Continuation of IDES 353. Culmination of a three-course series. Studio problems in the space planning and design of interior environments, emphasis on design methodology, materials, furnishing systems, detail drawing and presentation.

355: Interior Design Theory & Issues I. 0-1-1. Preq., Junior standing. Examination and analysis of the formal, contextual, conceptual, and/or operational issues associated with the use of textiles in residential and commercial interiors.

356: Interior Design Theory & Issues II. 0-1-1. Preq., Junior standing. Examination and analysis of the formal, contextual, conceptual, and/or operational issues associated with the use of color in residential and commercial interiors.

357: Interior Design Theory & Issues III. 0-1-1. Preq., Junior standing. Examination and analysis of issues associated with various specialized design practices.

451: Furniture Design. 6-1-3. Original student furniture design concepts are developed through a coordinated study and analysis of function, anthropometric, structures, materials, construction, and industrial processes.

452: Interior Design IV. 6-1-3. Preq., IDES 354. Examination of large scale commercial and/or residential interior projects through detailed design and development emphasizing the integration of interior environments with architectural envelopes.

453: Interior Design V. 6-1-3. Preq., IDES 452. Examination of large scale commercial and/or residential interior projects through detailed design and development emphasizing the integration of interior environments with materials and systems.

454: Interior Design VI. 6-1-3. Preq., IDES 453. Examination of large scale commercial and/or residential interior projects through detailed design and development emphasizing the formal and spatial articulation of interior environments.

456: Professional Practices. 0-3-3. Preq., Junior standing. Preparation for entering the professional practice of interior design; includes office procedures, business ethics, contract documents, specifications, and market sources, etc.

457: History of Furniture I. 0-3-3 . Preq., ARCH 211, 222, and 231. History of periods of furniture design from antiquity to industrial revolution, including study of dominant influences and characteristics of historical interiors, furnishings, and ornamental design.

458: History of Furniture II. 0-3-3. Preq., IDES 457. A history survey of the development of contemporary design from art Noveau to the present, including architectural elements, furniture, lighting, wallcovering, flooring, and building materials.

500: Design Research Methods. 0-3-3. Preq., Graduate standing or consent of instructor. An introduction to research methods applicable to the execution of scholarly investigations in the discipline of interior design.

510: Interior Design Graduate Studio. 12-0-4 (12). Preq., Graduate standing. Guided studio projects involving exhibition, furniture, or universal design.

520: Interior Design Graduate Research. 6-1-3 (9). Preq., IDES 500. Guided research projects into various aspects of interior design.

530: Interior Design Graduate Seminar. 0-3-3 (9). Preq., Graduate standing. Reading and discussion of current topics associated with interior design education, research, or practice.

540: Graduate Interior Design Internship. 20-0-6 (18). Preq., Graduate standing and consent of graduate program coordinator. Supervised interior design experience emphasizing application of principles in a research, manufacturing, or practice setting.

550: Research & Thesis in Interior Design. 12-0-4 (12). Preq., IDES 500. Preparation, development, and execution of a well-designed thesis under the supervision of the student's graduate committee.

560: Research & Project in Interior Design. 12-0-4 (8). Preq., IDES 500. Preparation, development and execution of a comprehensive design project under the supervision of the student's graduate committee.

570: Graduate Design Exhibition. 12-0-4. Preq., IDES 560. Preparation and installation of an exhibition of a comprehensive design project or graduate design work.

JOURNALISM (JOUR)

101: News Writing. 0-3-3. May be taken with ENGL 101. Beginning course in news writing. Work on "leads" and other newspaper writing basics. Typing ability required.

102: News Writing. 0-3-3. Preq., JOUR 101. Involves principles of interviewing, advanced reporting and specialty writing such as police reporting, consumer reporting and coverage of public affairs.

222: Using the Internet for Research. 0-3-3. Use of the Internet as a means of conducting research, with particular emphasis on the World Wide Web. Discussion and practical application of Internet-based research techniques.

310: Copy Editing. 0-3-3. Preq., JOUR 101. Course dealing with methods of editing copy and the writing of headlines.

311: Advanced Copy Editing. 0-3-3. Preq., JOUR 310. Techniques of newspaper makeup and layout; includes writing headlines, editing wire copy, cropping and sizing photography, principles of makeup and dummying of pages.

320: Feature Writing. 0-3-3. Preq., JOUR 101, 102. Practical instruction in gathering material for "human interest" and feature articles of various types for magazines as well as newspapers.

330: Editorial Writing. 0-3-3. Preq., JOUR 101. Course in the study of fundamentals and practice in editorial writing. Course includes units on recent history and current events.

350: Practical Reporting. 6-0-2 (4). Open only to journalism majors or minors. Preq., JOUR 101, 102, 310, 320. Writing of articles for the university newspaper upon assignment or consultation with faculty supervisor. May be repeated for two additional semester hours' credit.

353: General Newspaper Work. 6-0-2 (4). Open only to journalism majors or minors. Preq., JOUR 101, 102, 310, 320. Practical lab work on university newspaper. May be repeated for two additional semester hours credit.

355: Practical Reporting. 6-0-2. Open to majors and minors only. Preq., JOUR 101, 102, 310, 320. Practical lab work on "The Tech Talk." May be repeated for two additional semester hours credit.

360: Advertising. 0-3-3. Fundamental study of advertising principles, including information on major media.

375: People and Events. 0-3-3. Creative writing, as it applies to magazines and newspapers. A "how-to-get-published" primer, with oral and written critiques of work.

400: Media and the Law. 0-3-3. Preq., 9 hours of JOUR. Emphasis on legal rights, responsibilities related to the media, and the public's right to know. Media court cases to be considered.

420: Civic Journalism. 6-1-3. Introduction to concepts of engaging public in civic discussions and information flow using news media. Hands-on experience in news writing and data collection and analysis.

440: Media and Culture. 3-2-3. Impact of mass media on culture through lectures and laboratory experiences. Examination of historical context and current processes that shape media and culture.

450: Public Relations. 0-3-3. Comprehensive approach into diverse functions of the practitioner as a specialist, analyst and counselor relevant to public relations' role involving monitoring public opinion.

451: Advanced Practical Reporting. 6-0-3. Junior and senior majors only and by permission of instructor. Consists of practical news work in professional media, work ranging from basic news beat coverage to news writing.

LIBERAL ARTS (LBAR)

189: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

194: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

289: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

294: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

389: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

394: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

435: Undergraduate Research. 1 - 3 hours credit (6). Introduction to methods of research. Preq., consent of instructor. Credit depends on nature and depth of problem assigned.

489: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

494: Special Topics. 1-4 hours credit (4). Selected topics in an identified area of study in the College of Liberal Arts. May be repeated for credit.

500: Orientation to Professional Practice. 0-3-3. This course will familiarize graduate students with the principal issues concerning professional practice in their chosen fields of study.

503: Special Problems. 1-3 hours credit (6). Independent study. Topics arranged to meet the needs of the student.

551: Research and Thesis. 3 hours credit or multiple thereof. Maximum credit allowed is 6 hours.

589: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Liberal Arts.

594: Special Topics. 1-4 hours credit. Preq., graduate standing. Selected topics in an identified area of study in the College of Liberal Arts.

LIBRARY SCIENCE (LSCI)

LSCI courses numbered 300 and 400 are open only to juniors and seniors.

201: Books and Materials for the Elementary School. 0-3-3. A study of the reading interests of children. Selection and evaluation, sources and use of materials with children. Extensive reading of children's books.

210: Libraries and Librarianship. 0-3-3. Introductory survey of libraries and librarianship designed for students entering the profession.

401: School Library Administration. 0-3-3. Administration of the school library with emphasis on planning for effective use of library services and materials in cooperation with instructional staff. **(G)**

402: Acquisition and Organization of Library Materials. 0-3-3. Preq., LSCI 401 or consent of instructor. Basic principles of cataloging and classifying print and non-print materials. Study of Dewey Decimal Classification System. **(G)**

403: Introduction to Reference Materials and Service. 0-3-3. Selection, evaluation and use of basic reference works. Practice in solution of typical reference problems. Emphasis on school library as learning center. **(G)**

405: Books and Materials for the Young Adult. 0-3-3. Selection, evaluation, and source utilization of print and non-print materials meeting the needs of the young adult. Extensive reading of books for the young adult. **(G)**

435: Internship in Library Science. 1-3 hours credit (6). Preq., twelve semester hours of Library Science. Supervised library science experience in the elementary or secondary school. (Pass/Fail).

440: Library Automation. 0-3-3. Preq., LSCI 210, 302 or consent of instructor. Planning and implementing automated library procedures using the most current technology. **(G)**

450: Literature for Children. 0-3-3. Designed to relate understanding of child development to knowing and using print and non-print materials with children. Practical experience in story-telling and creative drama. **(G)**

451: Workshop in School Librarianship. 0-3-3 (6). Preq., professional school experience and consent of instructor. An in-depth study of school library learning center programs. May be repeated for credit when topics vary. **(G)**

LOUISIANA EDUCATION CONSORTIUM (LEC)

700: Introduction to Doctoral Research Design. 0-3-3. This course is designed to extend the student's knowledge of and expertise in areas of research design, style, and format of writing a dissertation as well as use of graduate electronic resources and statistical analysis.

701: Utilizing Technology for Statistical Analysis in Education. 0-3-3. This course surveys procedures for using the computer in text editing, data management, and statistical processing of research data.

702: Evaluation Theory and Practice. 0-3-3. This course investigates the theories and practices associated with performance evaluation, focusing on individual, instrument, and program evaluation and the decision-making processes associated with each.

703: Qualitative Research in Education. 0-3-3. This course examines theories and methods of qualitative educational research, including ethnography, case studies, interview studies, and document analysis.

704: Sociocultural Issues in Education. 0-3-3. This course examines and analyzes sociocultural issues relating to the delivery of educational services in school districts with diverse student populations.

705: Problem Solving and Decision-Making Processes. 0-3-3. Applied strategies and techniques involved in problem-solving behaviors are presented. Models of decision-making are explored with emphasis on methods and processes in decision-making.

706: Interpersonal Communication and Conflict Resolution. 0-3-3. Methods and styles of positive interpersonal communication and techniques and methods of conflict resolution utilized by administrators and faculty are presented.

707: Curriculum Theory and Design. 0-3-3. This course focuses on school curriculum theory, design, revision, reform and critical issues.

708: Models of Teaching: Theories and Application. 0-3-3. Preq., LEC 707 or concurrent enrollment. This courses builds the requisite knowledge and skills for selecting and implementing various teaching models congruent with specific teaching and learning needs.

709: Research on Effective Teaching and Learning. 0-3-3. This course examines research-based theories and practices of teaching and learning, including diagnosing student needs and selecting appropriate learning strategies.

710: Foundations and Procedures for Professional Development. 0-3-3. This course focuses on analysis of the professional environment with emphasis on procedural strategies for professional development as evidenced by teaching, service, and research.

711: Advanced Theory and Research in Educational Leadership. 0-3-3. Conceptual models used to define and explain learning organizations and the investigation of leadership roles, strategies, and methods.

712: Advanced Principles of Organization and Administration of Schools. 0-3-3. Organization and administration of schools, including fundamental concepts of organization, administration, and management are explored.

713: Foundations of Human Resource Development. 0-3-3. Theories of human resource development and exemplary models are identified and analyzed. Utilization of human resource information system technology is included.

714: Policy Analysis and Power Structure. 0-3-3. Educational policy processes in school administration and supervision, authority and responsibility, public policy, power structure, school boards, principalships, and superintendency roles are presented.

715: Advanced Content Methodology and Techniques. 0-3-3. This courses analyzes and evaluates content-specific methods, techniques, and trends for early childhood, elementary, middle and secondary education.

716: Problems and Issues in Curriculum and Instruction. 0-3-3. This course analyzes and evaluates current curriculum concepts and designs as well as major trends in curriculum and instruction for K - 12 settings.

717: Grants Planning and Management. 0-3-3. Strategies are presented to identify relevant funding sources at the local, regional, and national levels and to prepare, submit, and manage effective proposals.

718: Principles and Practices in Instructional Supervision.0-3-3. Strategies and techniques of supervising instruction are presented and reviewed. Models of supervising instructional programs are analyzed, interpreted, and evaluated.

750: LEC Cognate/Elective. 1-6 hours credit. Course number used to register and pay fees for cognates and approved electives, which are not listed in the respective course databases of LEC member institutions. Course number is replaced at the end of the enrollment period by actual cognates/electives titles.

776: Doctoral Internship Seminar. 0-3-3. This seminar is designed to enable students to demonstrate and apply knowledge bases and dispositions acquired/refined in the other program components and courses and to share their internship experiences with other students.

777: Internship. 3-6 hours credit (Pass/Fail). This course is a supervised on-site educational experience in curriculum, instruction, supervision, or administration.

788: Research Design Seminar. 0-3-3 (6). This course is a research seminar concentrating on the selection and utilization of qualitative and quantitative field-based research designs.

799: Dissertation. 3 hours credit (12).

MANAGEMENT (MGMT)

201: Supervisory Techniques. 0-3-3. Basic supervision of small employee groups including employee hiring and dismissal, planning and organizing work assignments, evaluating performance, necessary records, and legal aspects.

310: Management of Organizations. 0-3-3. Preq., junior standing. Introduction to fundamental principles of management practice with a particular emphasis on developing an understanding of human behavior in organizations.

333: Operations Management. 0-3-3. Preq., QA 233. Concepts and strategies concerning the management of production and operations processes in manufacturing and service organizations; capacity; quality and inventory management; planning and control systems.

340: Small Business Management and Entrepreneurship. 0-3-3. Organizing and operating the small business, with special attention to personal qualifications, capital requirements, location, sources of assistance. MGMT 350 at GSU.

400: Entrepreneurship/New Venture Creation. 0-3-3. A study of the entrepreneur's role in business, including an introduction to the process of developing an idea into a feasible business plan.

401: Internship in Management I. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Management II. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

419: Collective Bargaining. 0-3-3. Preq., ECON 202 or 215 or consent of instructor. History of American labor union movement, collective bargaining, labor-management problems, and government and labor relations. Considerable emphasis is given to case studies. MGMT 320 at GSU. **(G)**

447: Personnel Law. 0-3-3. A survey of landmark cases involving the labor movement, federal and state wage and hour laws, industrial relations and current issues in personnel law. **(G)**

460: Purchasing and Materials Controls. 0-3-3. Preq., MKTG 300. Principles of procurement and analysis of purchasing problems, with emphasis on quality and quantity control, pricing policy inspection, and standards of performance. **(G)**

470: Personnel Management. 0-3-3. A study of the functions and procedures in personnel management with emphasis on the procurement, development, maintenance and utilization of the work force. **(G)**

472: Compensation Systems. 0-3-3. Design of total compensation systems with emphasis on compensation policies, programs, and practices including job analysis, position descriptions, job evaluation and job design.

475: Industrial Management. 0-3-3. Preq., MGMT 333. Management principles as applied to industrial production with emphasis on manufacturing strategy, just in time, quality control, scheduling, plant layout, and supplier relations. **(G)**

476: Systems and Operations Management. 0-3-3. Preq., MGMT 333. Advanced studies and problems in the planning, management, and control of industrial operations. Scheduling, capacity, and shop floor control are emphasized. **(G)**

478: Seminar in Personnel and Industrial Relations. 0-3-3. Preq., MGMT 470. Readings, problems and cases in human resource management. Analysis of current problems and future prospects are emphasized. **(G)**

485: International Business Management. 0-3-3. Readings and cases in international business: governmental activities, regionalism, market opportunities, structure of international companies, company intelligence, human relations, operating policies, procedures and problems. **(G)**

510: Contemporary Management. 0-3-3. An analysis of management principles, functions, and practices with a particular emphasis on the application of theory to contemporary management issues and problems.

537: Human Resources Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An advanced course in human resource management with an emphasis on personnel functions, within the context of the strategy, structure, and environment of contemporary organizations.

539: Organization Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. A macro approach to the study of complex organization emphasizing current research findings.

544: Advanced Production and Operations Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth analysis of production/operations concepts, methods, and techniques from a systems perspective.

547: Seminar in Industrial Relations. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth study of current issues in the area of labor-management relations.

550: Directed Study in Management. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of management.

560: Materials Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Basic concepts of the materials management function including quality management, MRP II, scheduling, inventory management, purchasing, materials handling, JIT, and manufacturing strategy.

571: Organizational Behavior. 0-3-3. Preq., MGMT 510 or consent of instructor. A seminar with emphasis on theories and concepts of the behavioral sciences relevant to the internal operations of the organization.

580: Seminar in Venture Assessment and Management. 0-3-3. Preq., MGMT 510 or consent of instructor. An in-depth seminar applying the tools of analysis from functional business areas to the problems of proposed and existing firms utilizing actual cases.

595: Administrative Policy. 0-3-3. Preq., ACCT 505, CIS 510, ECON 510, FINC 515, MGMT 510, MKTG 530, QA 525. A synthesis of the material covered in the courses required for the MBA. Specific problems and cases are used to develop executive decision-making.

601: Research Methods I. 0-3-3. Preq., QA 605. An in-depth study of principles, theories, objectives, techniques, and problems as applied in social science research.

602: Research Methods II. 0-3-3. Preq., QA 610 and MGMT 601 or MKTG 601. A course designed to introduce the student to the collection, analysis, and interpretation of survey research data with an emphasis on the application of multivariate statistical techniques.

610: Current Research Issues in Management. 0-3-3. A seminar emphasizing the nature of theory and theory development and the analysis of current theoretical and empirical literature within the field of management.

615: Seminar in Behavioral Research Methodology. 0-3-3. May repeat one time for credit. Analysis and intensive study of research and research methodology utilized in the behavioral sciences. The method of science as applied to management is emphasized.

620: Doctoral Seminar in Research. 0-3-3 (6). May be repeated one time for credit. Research on individual topics. Should be taken near completion of course work.

629: Organization Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A macro approach to the study of complex organization emphasizing current research findings. Credit will not be given for MGMT 629 if credit is given for MGMT 539.

637: Human Resources Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An advanced course in human resource management with an emphasis on personnel functions, within the context of the strategy,

structure, and environment of contemporary organizations. Credit will not be given for MGMT 637 if credit is given for MGMT 537.

639: Seminar in Strategy & Organizational Theory. 0-3-3. Preq., MGMT 510 or consent of instructor. A doctoral seminar focusing on strategy and organization theory with emphasis on theoretical and empirical research and its application.

644: Advanced Production and Operations Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth analysis of production/operations concepts, methods, and techniques from a systems perspective. Credit will not be given for MGMT 644 if credit is given for MGMT 544.

645: Evolution of Management Thought. 0-3-3. Preq., MGMT 510 or consent of instructor. Seminar with emphasis on important contributions to modern management thought as evidenced in the writings of major contributors.

647: Seminar in Industrial Relations. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth study of current issues in the area of labor-management relations. Credit will not be given for MGMT 647 if credit is given for MGMT 547.

650: Directed Study in Management. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of management.

660: Materials Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. Basic concepts of the materials management function including quality management, MRP II, scheduling, inventory management, purchasing, materials handling, JIT, and manufacturing strategy. Credit will not be given for MGMT 660 if credit is given for MGMT 560.

671: Organizational Behavior. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A seminar with emphasis on theories and concepts of the behavioral sciences relevant to the internal operations of the organization. Credit will not be given for MGMT 671 if credit is given for MGMT 571.

680: Seminar in Venture Assessment and Management. 0-3-3. Preq., MGMT 510 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth seminar applying the tools of analysis from functional business areas to the problems of proposed and existing firms utilizing actual cases. Credit will not be given for MGMT 680 if credit is given for MGMT 580.

685: Comprehensive Exam in Management. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in management. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in management. Requires consent of graduate director.

MARKETING (MKTG)

235: Fundamentals of Retail Store Operation. 0-3-3. An introduction to operation of retail stores; retail salesmanship, purchasing control, and supervision.

300: Marketing Principles and Policies. 0-3-3. Preq., ECON 202 or 215 and junior standing. Marketing functions; institutions; policies and strategies with their business, economic, and social implications.

307: Salesmanship. 0-3-3. Preq., junior standing. A study of the selling process with emphasis on the economic aspects of salesmanship and the role of the salesman in buyer-seller relationships.

320: Consumer Behavior. 0-3-3. Preq., junior standing. A study of the consumer and the relation to the marketing process.

401: Internship in Marketing I. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

402: Internship in Marketing II. 3 hours credit. (Pass/Fail) Preq., consent of instructor and senior standing. On site, supervised, structured work experiences in the field of business.

420: Business Advertising. 0-3-3. Preq., MKTG 300. A study of the analysis of principles of successful advertising enabling the student to appraise their effectiveness as marketing tools and their social and economic significance. **(G)**

425: Sales Management. 0-3-3. Preq., MKTG 307 or consent of instructor. Relation of sales department to other departments; types of sales organizations, management of sales force; market analysis; price policies, sales budgets; distribution costs.

435: Retailing Management. 0-3-3. Preq., MKTG 300 and senior standing. Merchandise distribution by retail organization; emphasis on retailing in the distributive system and problems of management and control. **(G)**

473: Marketing Administration. 0-3-3. Preq., MKTG 320, 420, or 435, or consent. An in-depth analysis and use of marketing principles to construct marketing plans and decisions utilizing current studies, readings, and simulations.

482: Marketing Research. 0-3-3. Preq., QA 233. A consideration of marketing research as a management tool; application of research techniques to various marketing problems. **(G)**

485: International Marketing. 0-3-3. Preq., MKTG 300 or consent of instructor. International marketing opportunities and principles; marketing tools as a means of adapting the individual domestic business firm and its marketing methods to the international environment. **(G)**

530: Marketing Management. 0-3-3. A course to introduce the student to the role of the marketing manager in the development and implementation of strategies in the areas of products, pricing, channels, and promotion.

533: Advanced Marketing Research. 0-3-3. Preq., MKTG 530 or consent of instructor. An in-depth study of research philosophy, theory, objectives, techniques, and problems as applied to marketing.

534: Marketing Dynamics. 0-3-3. Preq., MKTG 530 or consent of instructor. A course designed to examine the marketing organism and its adjustments to the legal, political, economic, social, and cultural environment.

537: Seminar in Buyer Behavior. 0-3-3. Preq., MKTG 530 or consent of instructor. An in-depth examination of the conceptual and theoretical foundations of consumer and industrial buyer behavior.

550: Directed Study in Marketing. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of marketing.

600: Survey of Marketing Theory & Practice. 0-3-3. Preq., MKTG 530 or consent of instructor. A survey of marketing literature examining the evolution of marketing theory and theoretical and empirical research including the philosophy of science, promotion, buyer behavior, distribution, ethics, global marketing, pricing, product development, and marketing strategy.

601: Research Methods I. 0-3-3. Preq., QA 605. An in-depth study of principles, theories, objectives, techniques, and problems as applied in social science research.

602: Research Methods II. 0-3-3. Preq., QA 610 and MGMT 601 or MKTG 601. A course designed to introduce the student to the collection, analysis, and interpretation of survey research data with an emphasis on the application of multivariate statistical techniques.

610: Seminar in Price Policies. 0-3-3. Problems and practices involved in formulating and administering price policies.

615: Seminar in Marketing. 0-3-3 (6). May be repeated one time for credit. An examination of concepts and research findings related to selected topics in marketing. Presentation and critical evaluation of reports from related disciplines.

633: Advanced Marketing Research. 0-3-3. Preq., MKTG 530 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth study of research philosophy, theory, objectives, techniques, and problems as applied to marketing. Credit will not be given for MKTG 633 if credit is given for MKTG 533.

634: Marketing Dynamics. 0-3-3. Preq., MKTG 530 or consent of instructor. Requires Doctoral standing. May require additional class meetings. A course designed to examine the marketing organism and its adjustments to the legal, political, economic, social, and cultural environment. Credit will not be given for MKTG 634 if credit is given for MKTG 534.

637: Seminar in Buyer Behavior. 0-3-3. Preq., MKTG 530 or consent of instructor. Requires Doctoral standing. May require additional class meetings. An in-depth examination of the conceptual and theoretical foundations of consumer and industrial buyer behavior. Credit will not be given for MKTG 637 if credit is given for MKTG 537.

650: Directed Study in Marketing. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of marketing.

685: Comprehensive Exam in Marketing. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in marketing. Successful completion is a prerequisite to the oral comprehensive exam for those

seeking a primary field or examined minor in marketing. Requires consent of graduate director.

MATHEMATICS (MATH)

099: Preparation for College Mathematics. 0-4-4. Required if Mathematics ACT score is less than 18, or Mathematics SAT is less than 430, unless a passing score is achieved on Placement Exam A. Real numbers; exponents; polynomials and factoring; algebraic fractions; linear equations and inequalities; quadratic equations; graphing; radicals. (Pass/Fail)

100C/100B: College Algebra. 0-5-5. Preq., Mathematics ACT score between 18 and 21 inclusive, or Mathematics SAT score between 430 and 510 inclusive, or Placement by Exam to bypass MATH 099, or successful completion of MATH 099. MATH 100B-C covers the same material as MATH 101 and includes additional supplementary review material. **Credit will not be given for MATH 100B-C if credit is given for MATH 101.**

MATH100C: 0-3-3. Radical expressions; rational exponents; complex numbers; quadratic, absolute value, rational equations; systems of linear equations; inequalities; functions; conics; graphs; inverse, exponential, logarithmic functions; applications. **Concurrent enrollment in the corresponding section of MATH 100B is required.**

MATH100B: 2-0-2. **(Pass/Fail)** Supplementary review material including rational exponents, integer exponents, multiplying polynomials, factoring, rational expressions. **Concurrent enrollment in the corresponding section of MATH 100C is required.** A grade of S will be assigned in MATH 100B if and only if the student earns a minimum grade of D in MATH 100C. A student who drops MATH 100C and wishes to continue attending class to be better prepared for repeating MATH 100B-C may remain enrolled in MATH 100B for the remainder of the quarter. Such a student who does continue to attend class will be assigned a grade of NC in MATH100B.

101: College Algebra. 0-3-3. Preq., Mathematics ACT score is greater than or equal to 22, or Mathematics SAT score is greater than or equal to 520. Radical expressions; rational exponents; complex numbers; quadratic, absolute value, rational equations; systems of linear equations; inequalities; functions; conics; graphs; inverse, exponential, logarithmic functions; applications. Credit will not be given for both MATH 100 and MATH 101.

111: Precalculus Algebra. 0-3-3. Preq., Mathematics ACT score is greater than or equal to 26, or Mathematics SAT score is greater than or equal to 590, or Placement by Exam, or MATH 101. Precalculus functions, graphs; miscellaneous equations, inequalities; polynomial functions; conic sections; exponential, logarithmic equations; systems of equations; matrices; determinants; sequences; series.

112: Trigonometry. 0-3-3. Preq., Mathematics ACT score is greater than or equal to 26, or Mathematics SAT score is greater than or equal to 590, or Placement by Exam or MATH 101. Solution of right triangles, reduction formulas, functions of multiple angles, trigonometric equations, inverse functions, and complex numbers. Credit will not be given for MATH 112 if credit is given for MATH 212 or 241.

113: Plane Geometry. 0-3-3. Preq., MATH 111 or 240. A course in plane Euclidean geometry for a student who is planning to teach high school geometry.

125: Algebra for Management and Social Sciences. 0-3-3. Preq., Mathematics ACT score is greater than or equal to 26, or Mathematics SAT score is greater than or equal to 590, or Placement by Exam or MATH 101. Linear and quadratic equations and functions, graphs, matrices, systems of linear equations, mathematics of finance, sets, probability and statistics, exponential and logarithmic functions.

203: Introduction to Number Structure. 0-3-3. Preq., MATH 101; Elementary Education majors only. Developing number sense and concepts underlying computation, estimation, pattern recognition, and function definition. Studying number relationships, systems, and theory. Applying algebraic concepts to solve problems.

204: Conceptual Geometry and Quantitative Analysis. 0-3-3. Preq., MATH 203; Elementary Education majors only. Studying the geometry of one, two, and three dimensions and applications to problems in the physical world. Exploring probability and statistics in real-world situations.

212: Applied Technical Mathematics with Calculus. 0-3-3. Preq., Mathematics ACT score greater than or equal to 26, or Mathematics SAT score is greater than or equal to 590, or Placement by Exam, or MATH 101. Applied trigonometry, vectors, basic applied differential calculus. Credit will not be given for MATH 212 if credit is given for MATH 112.

220: Applied Calculus. 0-3-3. Preq., MATH 101 and MATH 112 or Placement by Exam. Functions and graphs, the derivative, applications of derivatives, indefinite integrals, application of definite integrals. Credit will not be given for MATH 220 if credit is given for MATH 222 or 240 or 241 or 242.

222: Calculus for Business Administration and Economics. 0-3-3. Preq., MATH 111 or MATH 125 or Placement by Exam. Functions and graphs, the derivative, the indefinite integral and the definite integral; applications as applied to business and economics. Credit will not be given for MATH 222 if credit is given for MATH 220 or 240 or 241 or 242.

223: Applied Calculus for Electrical Technology. 0-3-3. Preq., MATH 220. Applications of calculus and differential equations to electrical technology; includes integration techniques, series, differential equations, and transforms.

240: Mathematics for Engineering & Science I. 3-2-3. Preq., Mathematics ACT score of 26 or better, or Mathematics SAT score of 590 or better, or Placement by Exam, or MATH 101. Functions, graphs, polynomial functions; trigonometric functions, exponential and logarithmic functions and equations; inverse functions; introduction to analytic geometry; limits; derivatives; continuity. Credit will not be given for MATH 240 if credit is given for MATH 220 or 222.

241: Mathematics for Engineering & Science II. 0-3-3. Preq., MATH 240. Differentiation rules; trigonometric reduction formulas, trigonometric equations, derivatives of algebraic, exponential, logarithmic, and trigonometric functions; application of differentiation. . Credit will not be given for MATH 241 if credit is given for MATH 112 or 220 or 222.

242: Mathematics for Engineering & Science III. 0-3-3. Preq., MATH 241. Optimization, antidifferentiation, definite integrals, techniques of integration, separable differential equations and linear constant coefficient differential equations (homogenous and inhomogenous). Credit will not be given for MATH 242 if credit is given for MATH 220 or 222.

243: Mathematics for Engineering & Science IV. 0-3-3. Preq., MATH 242. Areas and volumes, numerical integration, improper integrals, single variable continuous statistics, vectors, three-dimensional coordinates, introduction to multivariate integration.

244: Mathematics for Engineering & Science V. 0-3-3. Preq., MATH 243. Triple integrals, space curves, differentiation of functions of several variables, vector calculus, Green's and Stokes' theorem..

245: Mathematics for Engineering & Science VI. 0-3-3. Preq., MATH 244. Infinite sequences, power series, Taylor series, elementary partial differential equations, use of series to solve differential equations, LaPlace transforms.

307: Fundamentals of Mathematics. 0-3-3. Preq., MATH 243. Sets, relations, functions, equations, inequalities, proofs, development of the integers and rational numbers, evaluation of experimental programs in mathematics.

308: Introduction to Linear Algebra. 0-3-3. Preq., MATH 244. Matrices, systems of linear equations, vectors, vector spaces, linear transformations, eigenvalues and eigenvectors.

311: Discrete Mathematics I. 0-3-3. Preq., MATH 243. Logic, sets, functions, finite and infinite sets, permutations and combinations.

312: Discrete Mathematics II. 0-3-3. Preq., MATH 311. Binomial and Multinomial Theorems, principle of inclusion-exclusion, recurrence relations, directed graphs, network flows, and selected topics.

313: Introductory Numerical Analysis. 0-3-3. Preq. MATH 243 and knowledge of FORTRAN. Introduction to numerical techniques in finding roots of equations, solving systems of equations, approximating functions, derivatives and integrals.

318: Introduction to Abstract Algebra. 0-3-3. Preq., MATH 307. Fundamental set concepts, groups, rings, integral domains, fields, polynomials.

340: Introduction to Real Analysis. 0-3-3. Preq., MATH 244 and MATH 311 or 307. A rigorous introduction to the calculus of functions of one real variable.

401: College Geometry. 0-3-3. Preq., MATH 113 or equivalent, and MATH 243; or consent of instructor. Logical systems and basic laws of reasoning, axiomatic geometry, geometric transformations, selected Euclidean geometry, non-Euclidean and projective geometries. **(G)**

405: Linear Algebra. 0-3-3. Preq., MATH 308 or consent of instructor. Study of linear systems, matrices, and algebra of matrices, determinants, vector

spaces and subspaces, linear transformations and representations by matrices. (G)

407: Partial Differential Equations. 0-3-3. Preq., MATH 245. Solution of linear first order equations. Formation and solution of second order problems of parabolic, elliptic, and hyperbolic type. (G)

410: Advanced Engineering Mathematics. 0-3-3. Preq., MATH 245. Mechanical systems and electrical circuits, Fourier series, Laplace transforms, partial differential equations. (G)

411: Advanced Engineering Mathematics. 0-3-3. Preq., MATH 244. Vectors spaces and linear transformations, applications of matrices, vector analysis, calculus of variations. (G)

412: Vector and Tensor Analysis. 0-3-3. Preq., MATH 411 or consent of instructor. The algebra of vectors, differential vector calculus, differential geometry, integration, static and dynamic electricity, mechanics, hydrodynamics, and electricity, tensor analysis and Riemann geometry, further applications of tensor analysis. (G)

413: Foundations and Fundamental Concepts. 0-3-3. Preq., MATH 242, or consent of instructor. Mathematics before Euclid, Euclid's "elements," non-Euclidean geometry, Hillbert's "Grundlagen," algebraic structure, the modern mathematical method, sets, logic and philosophy. (G)

414: Numerical Analysis. 0-3-3. Preq., MATH 308, Knowledge of FORTRAN, or consent of instructor. Roots of polynomial and other nonlinear equations. Solutions of systems of simultaneous equations. Numerical applications of matrix theory and linear algebra. Interpolating polynomials. (G)

415: Numerical Analysis. 0-3-3. Preq., MATH 245 and 414, or consent of instructor. Curve fitting techniques. Function approximation techniques. Numerical differentiation. Numerical integration. Numerical solution of differential equations and systems of differential equations and boundary value problems. (G)

416: Abstract Algebra. 0-3-3. Preq., MATH 318 or consent of instructor. Number theory, equivalences, and congruences, groups, ideals. (G)

430: Projective Geometry. 0-3-3. Preq., MATH 244 and 308, or consent of instructor. Ideal elements, duality, harmonic sets, projectivity, projective theory of conics, theory of poles and polars. (G)

440: Linear Programming. 0-3-3. Preq., MATH 241 and 308, or consent of instructor. Characteristics of linear programming problems, properties of linear programming solutions, the simplex method with variations, optimality analysis, the dual problem, the transportation problem. (G)

441: Non-linear Programming. 0-3-3. Preq., MATH 440. Advanced topics in linear programming, quadratic programming, dynamic programming. (G)

445: Theory of Functions of Complex Variables. 0-3-3. Preq., MATH 244. Complex numbers, analytic functions, elementary functions, mapping elementary functions, integrals, power series, residues, poles, conformal mappings, applications of conformal mappings. (G)

450: Ordinary Differential Equations. 0-3-3. Preq., MATH 245 and 340, or consent. First-order equations, second-order linear equations, general linear equations and systems, existence and uniqueness theorems, plane autonomous systems. (G)

460: Number Theory. 0-3-3. Preq., MATH 318. Divisibility properties of integers, prime numbers, congruences, number theoretic functions. (G)

470: Introduction to Topology. 0-3-3. Preq., MATH 244, or consent of instructor. Introduction of concepts, metric spaces, countability axioms, separation axioms, connectedness, compactness, product spaces, continuous mappings and homeomorphisms, homotopy, quotient spaces. (G)

480: Introductory Analysis. 0-3-3. Preq., MATH 340. A study of functions in metric spaces-limits, continuity, integration, uniform convergence, approximations. (G)

490: Topics in Mathematics. 0-3-3 (6). Various topics in the field of Mathematics. May be repeated for credit. (G)

502: Special Functions in Applied Mathematics. 0-3-3. Preq., MATH 245. Orthogonal functions, solutions of differential equations of Legendre, Gauss, Hermite, Tchebysheff, Laguerre, and Bessel, properties of these solutions, coordinate system, and boundary value problems.

507: Partial Differential Equations. 0-3-3. Preq., MATH 407. Continuation of MATH 407. Existence, uniqueness, and representation of solutions, problems in higher dimensions, Green's formulas, multiple Fourier series, Fourier transforms, boundary value problems in infinite domains.

510: Functional Analysis. 0-3-3. Preq., MATH 405, 470. Linear spaces, normed spaces, metric spaces, Banach spaces, Hilbert spaces.

511: Functional Analysis. 0-3-3. Preq., MATH 510. Linear topological spaces, metric spaces, Banach spaces, Hilbert spaces.

515: Numerical Analysis. 0-3-3. Preq., Consent of instructor. Numerical analysis of problems in linear algebra, norms for vectors and matrices, convergence properties of sequences and series of vectors and matrices, convergence of iterative techniques for linear systems. Numerical differentiation and integration. Numerical solutions of differential equations.

520: Theory of Ordinary Differential Equations. 0-3-3. Preq., MATH 450. Existence and uniqueness theorems, dependence of solutions on a parameter, linear and nonlinear differential equations, differential inequalities, oscillation and comparison theorems, stability of solutions, perturbation theory.

530: Algebraic Topology. 0-3-3. Preq., MATH 470 and 416. Categories and functions, Eilenberg-Steenrod axioms, construction of the nomology and cohomology groups, homology of finitc complexes, universal coefficient theorems, Eilenberg-Zilben theorem, the cohomology ring, the cross product operation, fundamental group, higher homotopy groups.

544: Modern Operational Mathematics. 0-3-3. Preq., MATH 245. Theory and applications of transforms of Laplace and Fourier, inverse transforms by complex variable methods. Applications to analysis and linear operations.

545: Complex Analysis. 0-3-3. Preq., MATH 445. Rigorous development of limits, continuity, analyticity, sequences, uniform convergence, power series, exponential and trigonometric functions, conformality, linear transformations, conformal mapping and elementary Riemann surfaces.

546: Complex Analysis. 0-3-3. Preq., MATH 545. Continuation of MATH 545. Fundamental theorems in complex integration, local properties of analytic functions, calculus of residues, harmonic functions, entire functions, normal families, conformal mappings and Dirichlet's problem, elliptic and global analytic functions.

550: Algebraic Geometry. 0-3-3. Preq., MATH 244 and 405, or consent. Homogeneous linear equations and linear dependence, projections and rigid motions, homogeneous cartesian coordinates, linear dependence of points and lines, point geometry and line geometry, harmonic division and cross ratio, one-and-two dimensional projective transformations.

551: Research and Thesis in Mathematics. 3 credit hours (6). Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

562: Advanced Linear Algebra. 0-3-3. Preq., MATH 405. Eigenvalues, linear functionals, bilinear and quadratic forms, orthogonal and unitary transformations, normal matrices.

566: Advanced Abstract Algebra. 0-3-3. Preq., MATH 416. Concepts from set theory, groups, rings, integral domains, fields, extensions of rings and fields, modules, ideals.

574: Numerical Solution for PDE I. 0-3-3. Preq., MATH 407, 414. Finite difference schemes and their accuracy, stability, and convergence. Schemes for parabolic and hyperbolic PDEs.

575: Numerical Solution for PDE II. 0-3-3. Preq., MATH 407, 414, 574. Finite difference schemes for elliptic PDEs, iterative methods, and introduction to finite element methods and multigrid methods.

578: Probability Theory. 0-3-3. Preq., MATH 480 or consent of instructor. Probability spaces and random variables, characteristic functions and distribution functions, probability laws and types of laws, limit distributions, independent and dependent sums of random variables.

580: Mathematical Analysis. 0-3-3. Preq., MATH 480. Real number system, measures with emphasis on Lebesque measure, abstract integration with emphasis on the Lebesque integral.

581: Mathematical Analysis. 0-3-3. Preq., MATH 580. Metric Spaces, Topological Spaces and Banach Spaces.

584: Topics in Algebra. 0-3-3 (15). May be repeated for 3 hours credit each time.

586: Topics in Analysis. 0-3-3 (15). May be repeated for 3 hours credit each time.

587: Topics in Applied Mathematics. 0-3-3 (15). May be repeated for 3 hours credit each time.

588: Topics in Topology. 0-3-3 (15). May be repeated for 3 hours credit each time.

599: Graduate Training Seminar. 0-3-3 (15). Preq., Consent of instructor. Guided and/or directed study, readings, discussion, observation, and training in the teaching of college mathematics. (Pass/Fail)

655: Mathematical Modeling. 0-3-3. Preq., MATH 245 and STAT 620, or consent of instructor. Building deterministic and probabilistic models; applications from physical and life sciences. Transient and stationary models, stability, and optimal solutions. Model validation: acceptance, improvement, or rejection.

MECHANICAL ENGINEERING (MEEN)

215: Engineering Materials Laboratory. 3-0-1. Coreq., MEMT 201. A laboratory course studying the experimental behavior of engineering materials. Labs will include hardness testing, impact testing, tensile testing, and heat treating of materials.

292: Mechanical Engineering Computer Applications. 0-3-3. Preq., credit or registration in MATH 245. Application of modern computer programming principles to mechanical engineering problems. Numerical solutions of linear and nonlinear algebraic equations, numerical quadrature problems, and ordinary differential equations.

321: Manufacturing Processes. 3-1-2. Preq., MEMT 201 and MEEN 351. A study of the processes used in manufacturing machine parts. Designing for manufacturability. Laboratory is operational practice and demonstrations of machine tool, foundry, and welding.

334: Thermodynamics II. 0-2-2. Preq., ENGR 222. Continuation of ENGR 222. Study of gas mixtures, thermodynamic property relations, chemical reactions, combustion, and thermodynamics of fluid flow.

351: Computer-Aided Modeling. 3-1-2. Preq., MATH 244. Construction of virtual systems models using constructive solid geometry, swept volumes and trimmed parametric surfaces with engineering applications.

353: Heat Transfer. 0-3-3. Preq., MEEN 292 and ENGR 222. Fundamental concepts of heat transfer including conduction, convection, and radiation. Introduction to thermal systems design.

361: Advanced Mechanics of Materials. 0-3-3. Preq., MEMT 211, 312. Theories of stress and strain, failure criteria, energy methods, design for static strength, design for fatigue strength.

363: Dynamics of Machine Elements. 0-3-3. Preq., MEMT 312. Kinematics and kinetics of machine elements such as linkages, cams, and gear trains.

371: Dynamic Systems. 3-2-3. Preq., MEEN 292, MEMT 312; Coreq., ENGR 222. Modeling and design of dynamic mechanical and fluid systems. Introduction to linear vibrations and automatic controls. Numerical and Laplace transform solutions to ordinary differential equations.

382: Basic Measurements. 3-1-2. Preq., ENGR 221. Techniques and instruments for making and analyzing measurements in engineering.

400: Mechanical Engineering Seminar. 3-0-1. Preq., Senior standing. Professionalism, ethics, and service for mechanical engineers.

413: Composite Materials Design. 0-3-3. Preq., MEEN 361. An introduction to modern composite materials. Application of lamination theory to analysis of composites. Deformation and failure of composites. Structural design using composite matcrials. **(G)**

414: Failure Analysis. 0-3-3. Preq., MEEN 361. An introduction to failure analysis. Using analysis of failed parts to determine the cause of failure. Using failure analysis techniques to design to avoid failure.

432: Renewable Energy Design. 0-3-3. Preq., MEEN 334 or equivalent. Analysis and design of systems, which utilize renewable energy sources, such as solar energy, wind energy and geothermal energy. **(G)**

434: Cryogenic Systems. 0-3-3. Preq., MEEN 334 or equivalent. Analysis and design of systems which produce, maintain, or utilize low temperatures; liquefaction systems; refrigeration systems; separation and purification systems; storage systems. **(G)**

435: Internal Combustion Engines. 0-3-3. Preq., MEEN 334. Theory of IC engines. Fuels, combustion and thermodynamics. Carburation and fuel injection. Lubrication. Mechanical design of a typical engine. **(G)**

436: Air Conditioning and Refrigeration. 0-3-3. Preq., MEEN 334 and 353. Analysis and design of heating, ventilating and air conditioning systems for residential, commercial, and industrial applications. **(G)**

446: Advanced Fluid Mechanics. 3-2-3. Preq., MEMT 313 and MATH 245. Principles of viscous fluid flow including dimensional analysis and similarity, duct flows, boundary layer flow, turbomachinery, flow measurement and control and design of fluid systems. **(G)**

448: Gas Dynamics. 0-3-3. Preq., MEEN 334 and MATH 245. Study of the fundamental laws applied to compressible fluid flow. Isentropic flow, normal and oblique shocks, Prandtl-Meyer, Fanno, Rayleigh flow and supersonic design. **(G)**

450: Special Problems. 1-4 hours credit. Preq., senior standing and consent of instructor. Topics selected will vary from term to term for the purpose of covering selected topics of current importance or special interest.

451: Thermal Design. 3-2-3. Preq., MEEN 353 and MEMT 313. Design of thermal components and systems.

465: Machine Element Design. 0-2-2. Preq., MEEN 292 and 361. Application of principles of strength of materials to the design of typical machine elements.

467: Computer-Aided Design. 0-3-3. Preq., MEEN 465 or consent of instructor. An introduction to the application of several modern computing techniques and technologies to the mechanical engineering design process. **(G)**

469: Prevention of Mechanical Failure. 0-3-3. Preq., MEEN 361. Analysis, prediction and prevention of failures in a structure or machine part during the design phase. **(G)**

475: Mechatronics. 4-2-3. Preq., MEEN 292, MATH 245 or equivalent. A study of the interface between controllers and physical systems; principles of electromechanical design, digital and analog circuitry, actuation, sensing, embedded control, and real-time programming. **(G)**

476: Feedback Control Systems. 3-2-3. Preq., MEEN 371. The analysis, design and synthesis of mechanical systems employing feedback control. Methods of determining system stability. Typical mechanical control elements and their transfer functions.

477: Mechanical Vibrations. 3-2-3. Preq., MEEN 371. Introduction to free and forced linear vibration of discrete and continuous mechanical systems. Analysis of translational and rotational systems using analytical and numerical methods.

478: Engineering Acoustics. 0-3-3. Preq., MATH 245. Analysis and design of systems for noise control, including vibration isolation, silencers, room acoustic treatment and acoustic barriers. **(G)**

486: Mechanical Engineering Laboratory. 3-0-1. Preq., ENGL 463, MEEN 353, 361, 382, MEMT 313. Design and performance of laboratory experiments in mechanical engineering.

488: Solids Modeling in Engineering Design. 0-3-3. Preq., Instructor's consent. Engineering design using 3-d graphics, constructive solid geometry, boundary representations, parametric surfaces and data exchange standards. **(G)**

490: Applications of Artificial Intelligence and Expert Systems in Mechanical and Industrial Engineering. 3-2-3. Preq., permission of instructor. Introduction to artificial intelligence, expert systems and their application in industrial, mechanical and manufacturing engineering systems. **(G)**

492: Mechanical Engineering Design I. 3-1-2. Preq., MEEN 215, 321, 451, 465, ENGL 463 and INEN 300. Open-ended design problems calling for the integration of thermal sciences, machine design, economics, etc.

494: Mechanical Engineering Design III. 3-0-1. Preq., MEEN 492. A continuation of MEEN 492.

496: Computational Techniques in Mechanical Engineering. 0-3-3. Preq., MEEN 292. The use of the digital computer in achieving numerical solutions to typical problems in the engineering design and analysis of thermal fluid and mechanical systems.

497: Finite Element Methods for Engineers. 0-3-3. Preq., MEEN 334 and 361. Introduction to approximation methods in engineering using finite elements. Physical and mathematical theory, computer applications. **(G)**

499: Technical Enrichment Course. 3-0-1. (6) Preq., consent of instructor. (Pass/Fail). May be repeated for a maximum of 6 hours of credit. Varying new technologies. Does not count toward graduation in Mechanical Engineering. Contact the department for more information.

500: Energy, Sources and Utilization. 0-3-3. Energy sources, uses and conservation; physical laws governing energy conversion and energy transfer; economic, political and environmental problems related to energy.

502: Advanced Machine Design. 0-3-3. The study of various topics from advanced mechanics as are applicable in the design of machines.

521: Machining Analysis. 3-2-3. The force and power analysis of material removal processes; analytical and finite element modeling and experimentation to determine process variables and relation to part quality.

524: Graduate Seminar. 0-1-1. Surveys, investigations, and discussions of current problems in mechanical engineering.

525: Graduate Seminar. 0-1-1. Surveys, investigations, and discussions of current problems in mechanical engincering.

526: Graduate Seminar. 0-1-1. Surveys, investigations, and discussions of current problems in mechanical engineering.

531: Advanced Thermodynamics. 0-3-3. Fundamental laws of thermodynamics; entropy and entropy production; kinetic theory of gasses; statistical thermodynamics; quantum thermodynamics for various systems.

542: Advanced Heat Transfer I. 0-3-3. Steady and transient conduction heat transfer; analytical solutions; approximate solutions; numerical methods.

543: Advanced Heat Transfer II. 0-3-3. Continuation of MEEN 542. Principles of forced and natural convection in laminar and turbulent flow; thermal radiation.

545: Potential Flow. 0-3-3. Basic principles and analytical methods for the motion of an inviscid, incompressible fluid. Eulerian equations. Conformal transformation. Mapping of flows. Rotation, circulation, and vorticity.

546: Viscous Flow I. 0-3-3. Study of the governing principles and methods in viscous fluid flow. Solutions of the integral and differential equations for laminar flow. Digital computer applications.

547: Viscous Flow II. 0-3-3. Preq., MEEN 546. Study of transition, turbulence, and compressibility in viscous flow. Theory of stability of laminar flows. Fundamentals of turbulent flow.

550: Special Problems. 1-4 semester hours. Advanced problems in mechanical engineering. The problems and projects will be treated by current methods used in professional practice.

551: Research and Thesis in Mechanical Engineering. 3 hours credit (6). Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

552: Heat Exchanger Design. 0-3-3. A study of the thermal and mechanical design of heat exchangers, regenerators, and radiators.

553: Thermal Stresses. 0-3-3. Thermal stresses in structures; plane stress problems; thermal stresses in plates and shells; thermoelastic instability; thermal fatigue, creep and inelastic thermal stresses at high temperatures.

555: Practicum. 0-3-3 (6). Preq., 12 semester hours of graduate work. Analytical and/or experimental solution of an engineering problem; technical literature survey required; development of engineering research techniques.

557: Special Topics: Mechanical Engineering. 0-3-3 (9). The topic or topics will be selected by the instructor from the various sub-areas of mechanical engineering. May be repeated as topics change.

566: Design Optimization. 0-3-3. Preq., MEEN 467 or consent of instructor. Constrained nonlinear minimization algorithms applied to mechanical engineering design problems.

568: Advanced Vibrations. 0-3-3. Analytical and numerical treatment of nonlinear and multidegree-of-freedom vibration problems in mechanical engineering.

569: Robot Manipulators. 0-3-3. The application of the basic principles of kinematics, dynamics, automatic control, computer programming, and human factors to the development of general purpose, programmable robot manipulators.

571: Advanced Engineering Dynamics. 0-3-3. Fundamentals of Newtonian dynamics principles of work and energy, D'Alembert's principle, Hamilton's principle, LaGrange equation. Central force motion, virial theorem. Rigid body motion and robotics.

575: Advanced Mechanical Systems Controls I. 0-3-3. The analysis and design of controllers for dynamic mechanical systems. System identification and plant controller response matching. Controllers for typical thermal and mechanical systems.

589: Computer Animation in Engineering. 0-3-3. Preq., MEEN 488. Computer generated animation for display of dynamic simulation or analysis results using solids models and color graphics.

591: Mechanical Engineering Analysis I. 0-3-3. Mathematical modeling of engineering systems. Physical interpretation of ordinary and partial differential equations and methods of solution.

592: Mechanical Engineering Analysis II. 0-3-3. A continuation of MEEN 591 with emphasis on approximate techniques for formulating and solving mathematical models of physical systems.

593: Advanced Finite Element Methods. 0-3-3. Development of the finite methods element using the variational formulation. Applications in structures, fluid mechanics and heat transfer.

641: Aerothermodynamics. 0-3-3. Preq., MEEN 543 and MEEN 547. Study of governing principles of hypervelocity flight. Laminar and turbulent flow of a dissociating gas. Shock-wave boundary-layer interaction. Slip flow. Free-molecular flow.

650: Special Problems. 1-4 semester hours. Preq., Consent of department head. Advanced problems in mechanical engineering. Special problems suitable for doctoral-level work.

651: Advanced Cryogenics. 0-3-3. Preq., MEEN 542. Study of mechanical regenerative cryocoolers and nonmechanical refrigeration systems used to achieve and maintain temperatures below 120 K.

672: Advanced Mechanical Systems Controls II. 0-3-3. Preq., MEEN 575, ELEN 510, or consent of instructor. Control systems for complex, compliant systems such as industrial robots. Adaptive systems and intelligent controllers.

MECHANICAL TECHNOLOGY (METE)

215: Thermal Science. 0-3-3. Preq., MATH 112. Temperature; heat; work; first law of thermodynamics; basic principles of heat transfer.

MECHANICS AND MATERIALS (MEMT)

201: Engineering Materials. 0-2-2. Preq., ENGR 122, PHYS 201. A study of the basic principles which relate the internal structure of materials to their mechanical, physical, and electrical properties.

206: Statics and Strength of Materials. 3-2-3. Preq., PHYS 209. Mechanics of rigid and deformable bodies, force systems, stresses and strains, fundamental concepts of static equilibrium, centroids, moments of inertia, and friction, and basic beam design.

211: Intermediate Strength of Materials. 3-1-2. Preq., ENGR 220. Mechanics of deformable bodies. Axial, shear, torsion and bending. Inelastic and indeterminate problems.

312: Dynamics. 0-2-2. Preq., ENGR 220 and PHYS 201. Kinematics and kinetics of particles and solid bodies in rectilinear, rotational and plane motion, energy methods, linear impulse and momentum.

313: Elementary Fluid Mechanics. 3-2-3. Preq.., ENGR 220 and MATH 242. Properties of fluids, fluid statics. Continuity, energy, and impulse-momentum equations. Steady flow in pipes and open channels. Fluid measurements. General fluid mechanics/hydraulics laboratory.

411: Advanced Engineering Materials. 0-3-3. Preq., MEMT 201 and MEEN 361 or consent of instructor. An introduction to modern engineering materials. Examination of newer materials such as high strength steels, polymers and composites.

508: Finite Element Analysis. 0-3-3. Linear and nonlinear finite element analysis of continual and discretized structures; use of finite element computer programs to solve typical structural problems.

511: Modern Engineering Materials. 0-3-3. An introduction to modern engineering materials with an emphasis on light weight or high strength materials such as polymers, composites, and high strength steels.

563: Theory of Elasticity. 0-3-3. General equations of elasticity; plane stress and plane strain; torsion and flexure of bars; Hertz contact stresses.

564: Plates and Shells. 0-3-3. Pure bending of plates; laterally-loaded plates; membrane theory of shells; bending of cylindrical and spherical shells.

565: Continuum Mechanics. 0-3-3. Introductory treatment of the fundamental, unifying concepts of the mechanics of continua.

577: Advanced Strength of Materials. 0-3-3. Energy methods, advanced bending theory, torsion, stress concentrations, failure theory and elastic stability.

588: Inelastic Deformation. 0-3-3. Analytical and numerical modeling of inelastic deformation in metals, polymers and ceramics, including plasticity, creep, viscoelasticity, and viscoplasticity.

MERCHANDISING AND CONSUMER STUDIES (MCS)

108: Professional Career Orientation. 0-2-2. Structured experiences in career assessment and exploration, leadership, and communication in the professional arena. Open to non-majors.

118: Pattern Design and Construction. 6-1-3. Introduction to basic pattern making techniques, fit, and construction. Some emphasis on techniques, commercial patterns, and ready-to-wear construction.

146: Internet for Personal and Family Management. 0-1-1. An introduction to the use of internet for personal and family activities.

218: Analysis of Children's Apparel. 0-1-1. Analysis of apparel for infants and young children.

219: Textiles I. 0-3-3. Study of fiber properties and production of textiles.

238: Apparel Selection and Analysis of Fashion. 0-3-3. Contemporary apparel needs of individuals and families with recognition of cultural, economic, and psychological factors.

246: Microcomputers in Personal and Family Management I. 3-2-3. An introduction to the use of microcomputers for more effective management of personal and family related tasks.

256: Individual and Family Management. 0-3-3. A systems approach to the management of personal and family resources.

258: Professional Selling Experience. 8.5-1-3. Preq., MCS 108 or consent of instructor. Supervised professional selling experience with emphasis on customer satisfaction and service. Field experience with cooperating firms.

268: Apparel Design I. 3-2-3. Preq., MCS 219. Application of principles related to the creation, fabrication and execution of apparel design.

276: Environments for Young Children. 0-1-1. Preq., FCS 201 or consent of instructor. Principles of housing and equipment applied to creating learning environments for infants and young children.

308: Buying. 0-3-3. Preq., MCS 258. Buying function in retail organizations. Includes merchandising concepts essential for buyers.

338: Intermediate Apparel Construction. 6-0-2. Preq., MCS 118 or consent of instructor. Emphasis on evaluation and use of advanced construction techniques including tailoring and couture methods.

348: Merchandising and Computer Management. 1-2-2. Preq., MCS 246 and 308 or consent of instructor. Procedures and task management for the retailer through computer application.

356: Families as Consumers. 0-3-3. Preq., ECON 215. Application of principles of consumerism to family decisions related to time and money use.

366: Consumer Issues. 0-3-3. Issues that arise between sellers/government and consumers including legislation, regulation and safety issues.

388: Media Planning and Promotion. 3-2-3. Preq., MCS 258 and 348. Study and application of principles of product promotion. Emphasis on coordination of customer targeting, communications, media presentation, and special events.

416: Interior Space Planning and Furnishings. 0-3-3. Preq., MCS 219 or consent of instructor. Study of the furnishings, fixtures, and design components for residential and commercial interiors.

419: Textiles II. 0-3-3. Preq., MCS 219 or consent of instructor. Study of textile products in relation to end-use, product quality, technology and trade regulations. **(G)**

426: Housing Policy. 0-3-3. Social aspects of housing including zoning, government regulations, and purchase considerations. **(G)**

429: Issues in Merchandising. 0-3-3. Preq., junior or senior standing. Domestic and international issues affecting merchandising and consumer studies. **(G)**

436: Advanced Individual and Family Management. 4-2-3. Preq., MCS 256, and advanced junior standing. Planning, coordinating, and evaluating all phases of individual and family management.

439: Historic Costume I. 0-3-3. Development of costume from ancient Egypt through the 17th century, with emphasis on social, economic, and aesthetic influences on its design.

440: Historic Costume II. 0-3-3. Development of costume from 18th century until the present, with emphasis on social, economic, and aesthetic influences. **(G)**

446: Microcomputers in Personal and Family Management II. 0-3-3. Preq., MCS 246. Advanced study in the use of microcomputers in personal and family management.

456: Consumer Decision Making. 0-3-3. Behavior of the consumer with reference to economic decision making and expenditure patterns relevant to current lifestyles. **(G)**

466: Consumer Relations. 0-3-3. Preq., HEC 327 or JOUR 450 or consent of instructor. Professional strategies and tactics in consumer studies programs. **(G)**

488: Visual Merchandising. 3-2-3. Preq., MCS 466 or consent of instructor. Promotion of products through visual merchandising techniques including display and store layout and design.

498: Field Study Tour in Merchandising and Consumer Studies. 3-1-3 (6). Structured educational experiences in major industry centers in the United States and abroad. Application required. **(G)**

516: Family and Consumer Economics Issues. 0-3-3. (12) Analysis of family and consumer in the larger economic and political systems.

528: Consumer Motivation and Factors in Apparel. 0-3-3. Relationship of consumer behavior to fashion; analysis of factors relative to production, distribution, and consumption of apparel and textiles.

536: Consumer Needs of Older Population. 0-3-3. Issues facing consumer affairs professionals working with the older consumer.

556: Current Trends in Consumer Decision Making. 0-3-3. (12) Preq., MCS 456 or consent of instructor. Recent advances and current research in behavior of the consumer with reference to economic decision making and expenditure patterns relevant to current lifestyles.

MICRO SYSTEMS ENGINEERING (MSE)

401: Microsystems Principles. 0-3-3. Fundamentals of microsystems, emphasizing the basic principles, materials, fabrication, measurement, and applications of microsystems.

402: Microfabrication Principles. 0-3-3. Preq., MSE 401. Fundamentals of microfabrication processes for the realization of microelectromechanical and microelectronic devices.

403: Microfabrication Applications and Device Fabrication. 3-2-3. Preq., MSE 402. Microfabrication processes, process integration and applications for the realization of microelectromechanical and microelectronic devices.

501: Microsystems Principles. 0-3-3. Fundamentals of microsystems, emphasizing the basic principles, materials, fabrication, measurement, and applications of microsystems.

502: Microfabrication Principles. 0-3-3. Preq., MSE 501. Fundamentals of microfabrication processes for the realization of microelectromechanical and microelectronic devices.

503: Microfabrication Applications and Device Fabrication. 3-2-3. Preq., MSE 502. Microfabrication processes, process integration and applications for the realization of microelectromechanical and microelectronic devices.

511: Vacuum Science & Technology. 0-3-3. Fundamental and advanced practices of vacuum technology are treated. Ultra high vacuum is included as well as introductory material on thin films and plasma processes.

521: Fundamental Lithography Processes. 0-3-3. A graduate level course in the fundamentals of optical lithography and electron beam lithography.

531: Electronic Materials. 0-3-3. A graduate level course in electronic materials starting from the atomic theory of matter. Applications include the fundamentals of microelectronic and optoelectronic devices.

541: Thin Film Deposition & Etching Techniques. 0-3-3. Fundamentals of deposition and processing of thin films for microstructure and microelectronics. Applications include micromechanical and microelectronic devices.

551: Material Analysis & Microstructure. 0-3-3. A graduate level course in the characteristics of materials based on modern instrumental techniques. Bulk and surface characteristics are included.

561: Micro & Nano Scale Measurements. 0-3-3. A graduate level course in measurements from the millimeter to the atomic scale. Applications include atomic manipulation and nanometer motion control.

641: Laser & Ion Beam Processing. 0-3-3. Direct methods for material processing and microstructure fabrication using laser beams or ion beams are presented. Applications include electronic devices and characterization of materials.

MUSIC APPLIED, CLASSES & RECITALS (MUAP)

100: General Recital. 1-0-0. A weekly, live performance laboratory for all music majors and minors taken concurrently with private lessons. Includes evening recital and concert attendance as required by the respective private lesson studio.

101: Class Piano-Major. 2-0-1(3). Group instruction in the techniques of basic piano skills for the music major. A piano proficiency must be successfully passed within 3 quarters of study.

102: Class Voice. 1-1-1. Group instruction in the techniques of the singing voice.

232: French Diction. 1-1-1. Pronunciation of French art song (melodie).

233: Italian Diction. 1-1-1. Pronunciation of Italian art song.

234: German Diction. 1-1-1. Pronunciation of German art song (Lieder).

399: Undergraduate Recital. 1-0-0. Preq., Recital Committee approval. For all music majors, preparation and performance of a degree recital of not less than 25 minutes of music.

499: Undergraduate Recital. 1-0-0. Preq., Recital Committee approval. For Bachelor of Fine Arts in Music Performance degree candidates, preparation and performance of a degree recital of not less than 50 minutes of music.

MUSIC APPLIED, PRIVATE LESSONS (MUPV)

Music Applied courses refer to private lessons taken in the appropriate studio in an area declared by the student. In order to be eligible to register for 400-level courses a student must pass an upper-division jury. This is usually done in the Spring of the Sophomore year. This rule applies only to music majors. Non-music majors may enroll at the 100 level according to the limitation of the applied instructor's schedule. All students must have the approval of the applied music instructor before registering for private lessons.

Minor Level

These courses are designed for students electing to minor in music, majors studying a secondary instrument, and non-music majors. Students register in

the specific area or instrument as designated by the course number. Students minoring in music must also register for MUAP 100: General Recital concurrently with private study.

111: Applied Piano - Minor. 1-0-1.
121: Applied Organ - Minor. 1-0-1.
131: Applied Voice - Minor. 1-0-1.
151: Applied Violin - Minor. 1-0-1.
152: Applied Viola - Minor. 1-0-1.
153: Applied Cello - Minor. 1-0-1.
154: Applied Bass - Minor. 1-0-1.
155: Applied Guitar - Minor. 1-0-1.
161: Applied Flute - Minor. 1-0-1.
162: Applied Oboe - Minor. 1-0-1.
163: Applied Bassoon - Minor. 1-0-1.
164: Applied Clarinet - Minor. 1-0-1.
165: Applied Saxophone - Minor. 1-0-1.
171: Applied Trumpet - Minor. 1-0-1.
172: Applied French Horn - Minor. 1-0-1.
173: Applied Trombone - Minor. 1-0-1.
174: Applied Euphonium - Minor. 1-0-1.
175: Applied Tuba - Minor. 1-0-1.
181: Applied Percussion - Minor. 1-0-1.

Lower Division

These courses are designed for the music major studying privately at the lower division level whose declared major is in the specific area designated by the course number. The letter "A" is added to the end of the course number to indicate 1 hour of credit and the letter "B" indicates 2 hours of credit.

211: Applied Piano - Major. 1-2 semester hours.
221: Applied Organ - Major. 1-2 semester hours.
231: Applied Voice - Major. 1-2 semester hours.
251: Applied Violin - Major. 1-2 semester hours.
252: Applied Viola - Major. 1-2 semester hours.
253: Applied Cello - Major. 1-2 semester hours.
254: Applied Bass - Major. 1-2 semester hours.
255: Applied Guitar - Major. 1-2 semester hours.
261: Applied Flute - Major. 1-2 semester hours.
262: Applied Oboe - Major. 1-2 semester hours.
263: Applied Bassoon - Major. 1-2 semester hours.
264: Applied Clarinet - Major. 1-2 semester hours.
265: Applied Saxophone - Major. 1-2 semester hours.
271: Applied Trumpet - Major. 1-2 semester hours.
272: Applied French Horn - Major. 1-2 semester hours.
273: Applied Trombone - Major. 1-2 semester hours.
274: Applied Euphonium - Major. 1-2 semester hours.
275: Applied Tuba - Major. 1-2 semester hours.
281: Applied Percussion - Major. 1-2 semester hours.

Upper Division

These courses are designed for the music major studying privately at the upper division level whose declared major is in the specific area designated by the course number. Students must have passed the upper division exam to be eligible. The letter "A" is added to the end of the course number to indicate 1 hour of credit and the letter "B" indicates 2 hours of credit.

411: Applied Piano - Major. 1-2 semester hours.
421: Applied Organ - Major. 1-2 semester hours.
431: Applied Voice - Major. 1-2 semester hours.
451: Applied Violin - Major. 1-2 semester hours.
452: Applied Viola - Major. 1-2 semester hours.
453: Applied Cello - Major. 1-2 semester hours.
454: Applied Bass - Major. 1-2 semester hours.
455: Applied Guitar - Major. 1-2 semester hours.
461: Applied Flute - Major. 1-2 semester hours.
462: Applied Oboe - Major. 1-2 semester hours.
463: Applied Bassoon - Major. 1-2 semester hours.
464: Applied Clarinet - Major. 1-2 semester hours.
465: Applied Saxophone - Major. 1-2 semester hours.
471: Applied Trumpet - Major. 1-2 semester hours.
472: Applied French Horn - Major. 1-2 semester hours.
473: Applied Trombone - Major. 1-2 semester hours.
474: Applied Euphonium - Major. 1-2 semester hours.
475: Applied Tuba - Major. 1-2 semester hours.
481: Applied Percussion - Major. 1-2 semester hours.

MUSIC DIRECTED STUDIES (MUDS)

450: Directed Studies. 1-4 semester hours (6). Preq., consent of advisor. Selected study in an identified area in Music. Credit depends on the nature of problem and work accomplished. May be repeated for credit.

550: Directed Studies. 1-4 semester hours (6). Preq., consent of advisor. Selected study in an identified area in Music. Credit depends on the nature of the problem and work accomplished. May be repeated for credit.

MUSIC ENSEMBLE (MUEN)

Students of Freshman or Sophomore standing sign up for 200 level. Students who have achieved Junior or Senior level standing sign up for 400 level.

200/400: Chamber Ensemble. 1-0-1 (6). Instruction and performance in small instrumental or vocal ensembles.

231/431: University Concert Choir. 4-0-1 (12). Preq., audition. Major Ensemble. Instruction and performance in large vocal ensemble.

232/432: Chamber Singers. 2-0-1 (12). Preq., audition. Major Ensemble. Instruction and performance in advanced vocal ensemble.

233/433: Gospel Choir. 2-0-1 (6). Instruction and performance in vocal ensemble with emphasis on ethnic, religious material.

234/434: Opera Workshop. 1-0-1 (3). A function study in opera performance including vocal, dramatic, and technical aspects of opera production.

251/451: Chamber Orchestra. 4-0-1 (6). Preq., audition. Instruction and performance in string ensemble.

260/460: Musical Stage Orchestra. 3-1-2 (8). Orchestral experience with literature and techniques of music theatre.

261/461: Musical Stage Production. 3-1-2 (8). Practical study of theories, practices and techniques of musical stage production.

271/471: University Marching Band. 4-0-1 (4). Preq., audition required. Major Ensemble. Instruction and performance in the college marching band. Includes performance in designated football games, bowl games, pep rallies and other presentations as directed.

272/472: Fall Wind Ensemble. 1-0-1 (2). Preq., audition. Open to any major. Instruction and performance in concert band. Includes reading and study of selected works from the major standard band repertoire for participating music majors.

273/473: Symphonic Wind Ensemble. 4-0-1 (4). Preq., audition. Major ensemble. Instruction and performance in advanced band ensemble.

274/474: University Concert Band. 4-0-1 (4). Preq., audition. Major ensemble. Instruction and performance in band ensemble.

275/475: University Jazz Ensemble. 3-0-1 (6). Preq., audition. Performance and instruction in stage band ensemble covering a variety of jazz styles and genres.

281/481: Percussion Ensemble. 2-0-1 (6). Preq., audition. Performance and instruction in the various combinations of percussion ensemble.

MUSIC GENERAL (MUGN)

112: Beginning Piano. 2-0-2 (6). Preq., consent of instructor. Instruction in beginning piano techniques for the non-music major.

152: Beginning Guitar. 2-0-2 (6). Preq., consent of instructor. Instruction in beginning guitar techniques for the non-music major.

290: Music Appreciation. 0-3-3. Satisfies General Education Requirement for Fine Arts Appreciation. For non-music majors. Attempts to answer the question "What is Music?" by acquainting students with knowledge and appreciation of music from several cultures and eras.

MUSIC HISTORY AND LITERATURE (MUHS)

101: Music Literature I. 0-2-1. A broad survey of music literature from the Middle Ages to the Early Baroque. Includes selected music of Native American peoples.

102: Music Literature II. 0-2-1. A broad survey of music literature from the Baroque through the Classical era.

103: Music Literature III. 0-2-1. A broad survey of music literature from the Romantic era to the modern era. Includes selected world music.

304: Music History I. 0-3-3. Preq., MUTH 102 or permission of instructor. Survey of music history and literature from ancient times through mid-eighteenth century. Concentrates on music of Western European traditions from Renaissance through Baroque era.

305: Music History II. 0-3-3. Preq., MUTH 102 or permission of instructor. Survey of music history and literature from mid-eighteenth century through 1970's. Latter part of course will introduce some musical concepts and traditions of non-western cultures.

306: Introduction to Non-Western Music. 0-2-2. Preq., MUHS 305 or permission of instructor. An introduction to the music and musical life of the world's peoples by sampling and by synthesis.

307: Introduction to Jazz History. 0-2-2. Preq., MUHS 305 or permission of instructor. Cultivate in the music major an understanding of jazz music through a comprehensive study of major artists and styles from 1900 to the present.

410: Piano Literature. 0-3-3. A survey of piano literature from the Classic Period to the present including literature composed for earlier keyboard instruments.

430: Vocal Literature. 0-3-3. A survey of vocal literature covering a wide diversity of composers, styles, and historical periods through discussion and analysis of representative works including assignments in listening, performance, and reading.

431: Choral Literature. 0-2-2. A survey of choral literature covering a diversity of composers, styles, and historical periods through discussion and analysis of representative works.

432: Survey of Opera. 0-3-3. Preq., permission of instructor. Designed to cultivate in students an understanding and enjoyment of opera by surveying selected, significant operatic works through viewing and analysis.

433: Survey of American Music Theatre. 0-3-3. Preq., MUGN 290 or SPTH 290. Designed to increase the understanding and appreciation of the American Music Theatre genre through the study of musical theatre works, composers, lyricists, directors, and performers.

MUSIC PEDAGOGY (MUPD)

300: Beginning Conducting. 1-1-1. Elementary methods, principles and practice of conducting.

301: Choral Conducting. 1-2-2. Preq., MUTH 201 and MUPD 300. Principles of interpretation and score reading with emphasis on choral conducting. Includes laboratory experience with the choral ensembles.

302: Instrumental Conducting. 1-2-2. Preq., MUTH 201 and MUPD 300. Principles of interpretation and score reading with emphasis on instrumental conducting. Includes laboratory experience with the instrumental ensembles.

303: Instruments. 1-1-1. Preq., MUTH 102. Group instruction in the functional knowledge of wind, string, fretted, and percussion instruments for vocal majors.

311: Piano for Vocal Education. 2-0-2. Preq., students must have passed all parts of the piano proficiency exam and have the consent of the instructor. Experiences in improvising, transposing and performing vocal accompaniments at the piano. These skills are required for vocal music education majors.

331: Vocal Methods. 1-1-1. Group instruction in the singing voice including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

334: Elementary Teachers Appreciation/Methods. 0-3-3. Provides an understanding and appreciation of the elements of music.

351: String Methods. 2-0-1. Group instruction in strings including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

352: Guitar Methods. 2-0-1. Group instruction in fretted instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

361: Flute Methods. 2-0-1. Group instruction in flute including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

362: Single Reed Methods. 2-0-1. Group instruction in single reed instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observations at the elementary and secondary levels.

363: Double Reed Methods. 2-0-1. Group instruction in double reed instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

371: High Brass Methods. 2-0-1. Group instruction in high brass instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

372: Low Brass Methods. 2-0-1. Group instruction in low brass instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

381: Percussion Methods I. 2-0-1. Group instruction in percussion instruments including methods and materials of instruction for the music educator. Includes laboratory experiences and observation at the elementary and secondary levels.

382: Percussion Methods II. 2-0-1. Preq., MUPD 381. Continuation of MUPD 381.

410: Piano Pedagogy I. 1-1-2. Methods and materials used in teaching piano to beginners. Required by the State Department of Education for teachers wishing to be certified in piano.

411: Piano Pedagogy II. 1-1-2. Preq., MUPD 410. Continuation of MUPD 410. Practice teaching of beginning students in integral to this course.

430: Vocal Pedagogy. 1-1-2 (4). Methods and materials of teaching voice in private studio and/or in the school.

464: Elementary Music Methods. 0-3-3. An overview of the methodologies of Orff, Kodaly, and Dalcroze. Learning to plan, execute and evaluate music programs in the elementary school. Includes observation at the elementary level.

465: Secondary Vocal Methods. 0-3-3. Examines the materials and methods for the teacher and supervisor of vocal music, e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing. Includes observation at the secondary level.

466: Secondary Instrumental Methods. 0-3-3. Examines the materials and methods for the teacher and supervisor of instrumental music, e.g., program building, contests, festivals, requisitions, grading, materials, scheduling, and rehearsing. Includes observation at the secondary level.

MUSIC TECHNOLOGY (MUTC)

141: Music Technology. 1-2 semester hours. Individualized instruction in the techniques of working with various sound sources and resources in the field of music technology.

301: Computer Science in Music. 2-2-3. Study of general computer applications and music related applications including notation, graphics, sound generation, sequencing, audio manipulation, and other related uses.

MUSIC THEORY (MUTH)

100: Rudiments of Music Theory. 0-2-2. Instruction in the fundamentals of music theory including reading, notation, and aural skills.

101: Music Theory I. 2-2-2. Preq., diagnostic exam. Beginning study of fundamentals of music covering the areas of notation, ear-training, sight singing, and functional keyboard.

102: Music Theory II. 2-2-2. Preq., MUTH 101. Continuation of MUTH 101, increasing emphasis on common-practice harmonic vocabulary.

103: Music Theory III. 2-2-2. Preq., MUTH 102. Continuation of MUTH 102.

201: Music Theory IV. 2-2-2. Preq., MUTH 103. Continuation of MUTH103 with emphasis on the organization and interaction of melodic, harmonic and rhythmic concepts and music forms. Aural training and functional keyboard is intensified in proportion to the depth of course content.

202: Music Theory V. 2-2-2. Preq., MUTH 201. Continuation of MUTH 201.

203: Music Theory VI. 2-2-2. Preq., MUTH 202. Continuation of MUTH 202.

301: Music Composition. 0-3-3. Preq., MUTH 203. A survey of the techniques of 20th century composition with projects consisting of the writing of short compositions illustrating these techniques.

302: Form and Analysis. 0-3-3. Preq., MUTH 203. A study of specific examples of the major forms of composition to show the relative importance of detail to the overall comprehension of a composition.

330: Choral Arranging. 0-2-2. Preq., MUTH 203. A study of writing for the individual voices and the combinations of voices in choral ensembles.

370: Instrumental Arranging. 0-2-2. Preq., MUTH 203. A study of writing for the individual instruments of the band and orchestra, the combinations of instruments in the various sections, and the combination of all the sections.

401: Counterpoint. 0-3-3. Preq., MUTH 203. A study of contrapuntal practice of the 18th and 19th centuries with emphasis on the understanding of counterpoint within a harmonic context.

NURSING (NURS)

109: Introduction to Nursing. 0-2-2. An introduction to the health care system and professional nursing. Basic human needs, the elderly client, and concepts related to death and dying are introduced.

110: Introduction to Application of the Nursing Process. 8-0-3. Coreq., NURS 109, and credit or registration in BISC225 and 226. Acquaints student with basic nursing principles and techniques of safe nursing care to meet basic human needs. Emphasis on interpersonal skills, communication, interviewing and observation.

112: Adult Health Maintenance I. 8-3-5. Preq., NURS 109 and 110 and BISC 225 and 226 and credit or registration in BISC227. Study, identification and application of nursing knowledge and skills related to adult health needs. Emphasis on patient-centered care utilizing the nursing process.

113: Introduction to Associate Degree Nursing. 0-0-10. Emphasizes the nursing process and basic human needs with introduction to associate degree nursing roles. Principles are applied with validation in the clinical setting.

114: Adult Health Maintenance II. 8-3-5. Preq., NURS 112 and BISC 225, 226, and 227. Continuation of the study, identification and application of nursing knowledge and skills related to adult health needs. Emphasis on patient-centered care utilizing the nursing process.

116: Adult Neuro/Psycho-Social Health Maintenance. 8-3-5. Preq., NURS 114 and PSYC 102. Utilizes nursing knowledge/skills in provision of health care. Emphasis on nursing care of clients experiencing threats to needs as a result of neuro-psycho-social dysfunction.

210: Maternal/Newborn Health Maintenance. 8-3-5. Preq., NURS 116. Study/application of principles and concepts of family-centered maternal/newborn care. Emphasis on meeting specific needs of clients during the childbearing cycle and newborn period.

212: Child Health Maintenance. 8-3-5. Preq., NURS 116 and PSYC 408. Study/application of nursing knowledge/skills related to children's and adolescent's health needs. Includes growth and development, family, and prevention of and intervention in illness.

214: Nursing Seminar. 0-1-1. Preq., Credit in all previous nursing courses. Study of current nursing trends in light of evolving patterns and practices. Emphasis on professional opportunities and obligations and legal aspects of nursing practice.

216: Nursing Practicum. 24-4-7. Coreq., NURS 214. Preq., Credit in all other nursing courses. Integration of knowledge and skills acquired in previous nursing courses in caring for clients with complex and/or multiple threats to basic needs.

280: Selected Topics. 1-3 hour(s) credit (6). Preq., Approval by Nursing Division Director. Independent study course designed for students to become involved with creative learning opportunities related to nursing research, theory and practice.

PHILOSOPHY (PHIL)

201: Introduction to Philosophy. 0-3-3. Preq., junior standing or permission of the instructor. Philosophical vocabulary; types and problems of philosophy; major philosophical positions.

305: Ethics. 0-3-3. Preq., PHIL 201 or permission of the instructor. A study of the writings of the major moral philosophers, beginning with the Greeks and continuing to the present.

PHYSICS (PHYS)

102: Introductory Physics. 2-1-1. An introductory survey of physics, use of library resources, and basic computation.

103: Introductory Physics. 2-1-1. A continuation of PHYS 102.

104: Introductory Physics. 2-1-1. A continuation of PHYS 103.

201: General Physics. 0-3-3. Preq., MATH 241. Thorough treatment of fundamental principles and detailed analysis of important physical situations.

202: General Physics. 0-3-3. Preq., PHYS 201 and MATH 242. A continuation of PHYS 201.

205: Descriptive Physics. 0-3-3. For non-science majors interested only in the cultural aspects of the subject.

206: Descriptive Physics. 0-3-3. A continuation of PHYS 205.

209: Elementary Physics. 0-3-3. Preq., MATH 112. For pre-medical, pre-dental, pre-pharmacy, and science education students. A study of the fundamental principles of physics and their applications.

210: Elementary Physics. 0-3-3. Preq., PHYS 209. A continuation of PHYS 209.

220: Astronomy - The Solar System. 0-3-3. An introduction to Astronomy, covering the history of Astronomy and the Solar System.

221: Introduction to Astrophysics. 0-3-3. Introduction to astronomy, with emphasis on physical principles. Application of mechanics to orbits of planets and multiple stars. Atomic theory applied to stellar spectra. Nuclear reactions in stars.

230: Astronomy - The Stars and Galaxies. 0-3-3. An introduction to Astronomy, covering the stars, galaxies, and the universe.

261: General Physics Laboratory. 4 1/2-0-1. Preq., MATH 112 or 241. Laboratory investigations of basic physical principles.

262: General Physics Laboratory. 4 1/2-0-1. Preq., PHYS 261. A continuation of PHYS 261.

303: Geometrical Optics. 0-3-3. Preq., PHYS 202. The study of thick lenses, lens system layouts, aberrations, photometric theory applied to optical systems, optical instruments and matrix optics.

304: Physical Optics. 0-3-3. Preq., PHYS 202. A thorough position of the wave theory of light and an introduction to the quantum theory.

307: Thermodynamics. 0-3-3. Preq., PHYS 202. Classical thermodynamics and introductory classical and quantum statistical mechanics.

320: Optics Laboratory I. 4 1/2-0-1. Experiments in optics to demonstrate optical phenomena.

350: Introduction to Lasers. 0-3-3. Preq., six hours of physics. Introduction to modern laser technology. A semi-quantitative approach presents all known types of lasers. Applications such as measurements, instrumentation, communications, biological, medical, and health hazards are concluding topics.

406: Electricity and Magnetism. 0-3-3. Preq., MATH 245, PHYS 202. A study of the fundamental theories of electricity and magnetism. An application of basic principles is stressed.

407: Electricity and Magnetism. 0-3-3. Preq., PHYS 406. A continuation of PHYS 406.

408: Electricity and Magnetism Laboratory. 4 1/2-0-1. Experiments in circuitry and in classical electricity and magnetism.

409: Electricity and Magnetism Laboratory. 4 1/2-0-1. Preq., PHYS 408. A continuation of PHYS 408.

415: Introduction to Lasers. 0-3-3. Preq., PHYS 304, 417. Introduction to modern laser technology. Topics included are spectra of simple systems, lifetimes and energy levels, atomic, molecular and solid state lasers, and laser applications.

416: Modern Physics. 0-3-3. Preq., PHYS 202. An advanced course in general physics stressing the modern developments of the subject.

417: Modern Physics. 0-3-3. Preq., PHYS 416. A continuation of PHYS 416.

418: Modern Physics Laboratory. 4 1/2-0-1. Laboratory exercises involving the electron and the nucleus.

419: Modern Physics Laboratory. 4 1/2-0-1. Preq., PHYS 418. A continuation of PHYS 418.

420: Optics Laboratory II. 4 1/2-0-1. Experiments in optics to demonstrate advanced optical phenomena.

422: Physical Mechanics. 0-3-3. Preq., PHYS 202, MATH 245. Statics, particle dynamics, dynamics of a rigid body, kinetic theory, elasticity, wave motion, and behavior of fluids. Fundamental importance of mechanical principles in all fields of physics emphasized. (G)

423: Physical Mechanics. 0-3-3. Preq., PHYS 422. A continuation of PHYS 422. (G)

424: Quantum Mechanics. 0-3-3. Preq., PHYS 423 or equivalent, PHYS 416, and MATH 245. An extension of mechanics into the microscopic world. The statistical nature of physical law is developed to augment the classical Newtonian picture of the macroscopic world.

430: Introduction to Medical Physics. 0-3-3. Preq., PHYS 209-210 or 201-202. A basic course in Physics of radiology, designed for students interested in therapeutical and diagnostic uses of ionizing radiation. (G)

435: Undergraduate Physics Research. 1-3 hours credit (6). Preq., consent of instructor. Introduction to methods of research.

440: Fourier Optics. 0-3-3. Preq., PHYS 406, 407, or ELEN 411. An introduction to the theory of Fourier Optics including optical data processing and holography. (G)

450: Modern Optics. 0-3-3. Preq., PHYS 350. Selected topics in modern optics.

462: Modern Physics for Teachers. 0-3-3. Preq., 8 hours of Physics or permission of instructor. A survey of modern physics as used by the high school teacher of physics. Emphasis is placed on experimental techniques.

463: Modern Physics for Teachers. 0-3-3. Preq., 8 hours of Physics or permission of instructor. Hands-on experience for teachers developing a physics science program that emphasizes the observational side of Physics.

465: Physics of Sound. 0-3-3. Preq., PHYS 205. The physical and psychophysical processes associated with sound are studied so that the basic mechanisms of hearing, speech and music can be better understood.

470: Seminar. 1-6 hours credit. Preq., Permission of instructor. An opportunity is given for students to present current topics and actively participate in discussions concerning new developments in physics.

480: Modern Astrophysics. 0-3-3. Preq., PHYS 417. Astrophysics is discussed in light of the tremendous amount of data accumulated from areas such as high energy experimental physics and elementary particle theory.

503: Topics in Physics. 1-3 hours credit (6). Independent study. Topics arranged to meet the needs of the student.

511: Electromagnetic Theory. 0-3-3. An advanced treatment of the theory of electricity and magnetism.

512: Solid State Physics. 4 1/2-3-4. An advanced treatment of the structure and the thermal, electrical and magnetic properties of solid materials.

521: Theoretical Mechanics. 0-3-3. A presentation of advanced classical mechanics oriented towards modern theories of physics.

522: Quantum Mechanics. 0-3-3. Preq., MATH 502. An outline of the principles of wave mechanics and quantum mechanics, followed by their application to problems in atomic and nuclear theory.

523: Classical Theory of Fields. 0-3-3. Preq., PHYS 511, 522. A concentrated study of the dynamics of relativistic particles and electromagnetic fields utilizing the Langrangian and Hamiltonian formulations for fields.

524: Quantum Theory of Fields. 0-3-3. Preq., PHYS 523. An advanced course on the quantum structure of field theories. Functional techniques are used to discuss the quantum theory of electroweak and strong interactions.

531: Theories of Physics. 0-3-3. Selected topics. Contemporary theories dealing with recent trends in physics.

532: Theories of Physics. 0-3-3. A continuation of PHYS 531.

533: Statistical Mechanics. 0-3-3. Preq., PHYS 521. A study of the statistical aspects of modern physical theory. Considers the classical and quantum aspects of many-particle systems.

540: Computational Methods in Physics Modeling and Simulation I. 0-3-3. Computational methods for implementing modeling and simulation of physical systems.

541: Computational Methods in Physics Modeling and Simulation II. 0-3-3. Preq., PHYS 540. Computational methods for implementing modeling and simulation of physical systems.

549: Physics Research & Reporting. 0-3-3 (6). Preq., 12 semester hours of graduate work. Experimental or computational study of a problem in physics. A survey of the relevant literature and a formal written report are required. This course fulfills the research and reporting requirement for a master's degree non-thesis option.

551: Research and Thesis in Physics. Registration in any quarter may be for three semester hours credit or multiples thereof. Maximum credit allowed is six semester hours.

PLANT SCIENCE (PLSC)

101: Introduction to Plant Science. 0-3-3. Basic concepts of production and management of agronomic and horticultural crops.

211: Forage Crops and Pasture Management. 3-2-3. A study of the growth adaptation and culture of forage crops including types of plants, methods of establishment and improvement, and use of forages.

284: Woody Plants. 3-2-3. Identification of woody landscape plants, including culture, propagation, and use.

300: Horticulture Field Trip. 9-0-1. Field trips to experiment stations, large wholesale and retail nurseries, botanical gardens, and arboreta.

301: Landscape Design. 3-2-3. Elements and principles of design as applied to the home and other small properties.

302: Environmental Design. 3-2-3. Environmental factors affecting the landscape, including discussion of natural systems, remote sensing and large-scale design.

309: Field Crops. 3-2-3. Fundamentals of production, harvesting, storage, marketing, and utilization of grain, fiber, oil, and sugar crops.

310: Soil Science. 0-3-3. Preq., CHEM 100, 101, 102. A general study of soil science, emphasizing the relation of soil properties and processes to plant growth. Also listed as ENSC 310.

311: Soil Science Laboratory. 3-0-1. Coreq. or Preq., PLSC 310. Laboratory exercises to elaborate fundamental principles of soil properties, soil testing, and soil survey reports. Also listed as ENSC 311.

312: Turf Management. 3-2-3. Establishment, maintenance, and management of turf grasses for homes, athletic fields, golf courses, playgrounds, parks, highways, airfields, and other uses.

319: Agricultural Chemical Applications and Techniques. 3-1-2. Equipment and procedures used for applying agricultural chemicals (e.g., herbicides, insecticides, and fungicides). Calibration. Safety. Exam for certification of applicators.

320: Plant Propagation. 3-2-3. Principles and practices of sexual and asexual methods or propagating horticultural plants.

384: Herbaceous Plants. 3-2-3. Identification of annual, perennial, and tropical plants, including culture, propagation, and use.

400: Special Problems. 3-0-1 (4). Assignments in floral or landscape design, greenhouse or field production projects or other horticulture practicums.

403: Edible Horticultural Crops. 3-2-3. Methods and practices of home and commercial production of vegetable and fruit crops, with emphasis on those adapted to the South.

409: Plant Breeding. 3-2-3. A study of the application of the fundamental principles of genetics to the development and maintenance of improved plant varieties. **(G)**

420: Greenhouse Management. 3-2-3. Principles and practices involved in greenhouse operation, including production of flowering and foliage crops.

421: Weed Science. 3-2-3. Weed control in Agricultural crops, including weed ecology, classification, dormancy, dissemination; seed anatomy and germination; herbicidal action and practical application techniques. **(G)**

422: Pest Management I. 0-3-3. Basic concepts of integrated pest management; pesticides, biological control agents, varietal resistance, pheromones and trap crops, laws and regulations, labeling requirements, pesticide classification and safety. **(G)**

423: Pest Management II. 3-2-3. Identification of insects, nematodes and disease-causing organisms affecting row crops of the south; monitoring procedures, economic threshold levels; steps in solving pest problems. **(G)**

430: Soil Fertility. 3-2-3. Preq., PLSC 310, 311. Fundamentals of soil fertility and plant nutrients; source, manufacture, use, and properties of chemical fertilizers.

440: Nursery Management. 0-3-3. Production, handling and sales practices in the nursery, greenhouse and garden center. **(G)**

441: Landscape Contracting. 3-2-3. Landscape contracting operations; estimating and bidding, plant installation, care and maintenance, design considerations, use of structural elements and irrigation systems. **(G)**

POLITICAL SCIENCE (POLS)

201: National Government in the United States. 0-3-3. A study of the development of the national government with emphasis on problems connected with the federal system and separation of powers.

302: Comparative Foreign Governments. 0-3-3. Preq., POLS 201 or consent of instructor. A study of the political systems and governments of the major European nation-states of the twentieth century.

303: State Government and Administration in the United States. 0-3-3. Preq., POLS 201. A study of the role of the state in the American Union including nation-state and interstate relations.

310: Government and the Economy. 0-3-3. Preq., POLS 201. Political/economic issues (employment, inflation, poverty, energy, environment, health care, etc.) are studied according to competing theories of political economy.

320: Legislation in the United States: Federal and State. 0-3-3. Preq., POLS 201. A study of the legislative process and of the influences that determine the nature of the legislative product.

322: Political Parties in the United States. 0-3-3. Preq., POLS 201. A study of American political parties, including historical origins, their broad role in the political system, and their current place in American politics.

325: History of European Political Theory. 0-3-3. Preq., POLS 201, and junior class standing, or consent of instructor. A study of Western political philosophy from its beginnings to the nineteenth century.

327: Modern Political Theory and Ideologies. 0-3-3. Preq., POLS 201. A study of nineteenth and twentieth century political theory with emphasis on the principal modern ideologies (Anarchism, Communism, Socialism, Fascism, Democracy).

330: The American Presidency. 0-3-3. Preq., POLS 201. A study of the American Presidency including its origins, roles, functions, and problems.

345: Scope and Methods in Social Sciences. 0-3-3. Preq., POLS 201. An introduction to basic statistics, research design, and the application of the qualitative and quantitative methods to the social sciences.

350: International Relations. 0-3-3. Preq., POLS 201. An introductory study of political contacts between modern nation-states, the origin of nationalism and imperialism, and the causes and effects of power politics.

355: American Foreign Policy. 0-3-3. Preq., POLS 201. America's foreign policy doctrines and the factors involved in their formulation, including constitutional framework, presidential and congressional leadership, pressure groups, public opinion, and international environment.

420: Contemporary Problems in Government. 0-3-3. Preq., One of the following courses: POLS 201, or 303, and junior standing.

426: American Constitutional Law I. 0-3-3. Preq., POLS 201. Introduction to judicial institutions and processes as well as a case method study of the constitutional issues of judicial review, federalism, government economic regulation, and others.

427: American Constitutional Law II. 0-3-3. Preq., POLS 201. A continuation of the case method study of constitutional law, with emphasis on political and civil rights (speech, press, assembly, religion, race, criminal procedure, etc.).

460: Politics of Developing Nations. 0-3-3. Preq., POLS 201. An analysis of the relationship of politics to rapid economic and social change in developing nations and evaluation of policies intended to promote development.

465: Asian Politics. 0-3-3. Preq., POLS 201. A survey of interrelationships among Asian nations, their relationships with occidental powers, their international roles, and politics of the region as a whole.

PROFESSIONAL AVIATION (PRAV)

101: Private Pilot Ground I. 0-3-3. An introduction to basic aerodynamics, aircraft systems, instrumentation, performance, and aviation weather. Initial preparation for FAA Private Pilot Certificate.

102: Private Pilot Ground II. 0-3-3. Preq., PRAV 101. An introduction to FAA regulations and procedures, communications, navigation, aviation physiology, aviation safety and emergency procedures. Final preparation for the FAA Private Pilot Written Certificate.

110: Private Pilot Flight I. 4-0-1. Preq., PRAV 101, 102 or concurrent enrollment. Provides student with approximately 11 hours of simulator/dual/solo flight instruction. Designed to meet FAA flight requirements for the Private Pilot Certificate. Special Fee.

111: Private Pilot Flight II. 4-0-1. Preq., PRAV 102 or concurrent enrollment. Provides student with approximately 24 hours of dual/solo flight instruction. Designed to meet FAA flight requirements for the Private Pilot Certificate. Special fee.

200: Aircraft Powerplant Systems. 0-3-3. Preq., PRAV 101/102. Theory of piston engines. A study of the internal combustion process in the radial, opposed and V-typed engines including engine driven accessories.

205: Aircraft Electrical Systems. 0-3-3. Preq., PRAV 101 and 102. Fundamentals of aircraft electrical systems.

208: Introduction to Computers. 1-2-2. Introduction to computers to acquire computer literacy. Study of hardware, software, systems, and application in aviation.

223: Fixed Base Operations. 0-3-3. Preq., PRAV 101 and 102. Detailed study of the functions and responsibilities of the typical Fixed Base Operator.

239: Aviation Weather. 0-3-3. Preq., PRAV 102. Weather systems, weather reporting, airborne weather radar, weather safety, and severe weather avoidance. Designed to meet weather knowledge requirements for instrument, commercial, and CFI ratings.

240: Instrument Pilot Ground I. 0-3-3. Preq., PRAV 102 and 111 or concurrent enrollment. Attitude instrument flying, instrumentation, navigation systems for general aviation and air carriers. Designed to meet the FAA ground training requirements for the Instrument rating.

241: Instrument Pilot Ground II. 0-2-2. Preq., PRAV 240 and Private Pilot Certificate. Navigation/approach charts, regulations pertinent to instrument flight, instrument flight planning, communications. Departure, en-route, and approach procedures. Final preparation for FAA Instrument rating.

242: Instrument Flight I. 3-0-1. Preq., Private Pilot Certificate. Provides the student with approximately 15 hours of instrument flight instruction necessary to meet the FAA requirements for the Instrument rating. Special Fee.

243: Instrument Pilot Flight II. 3-0-1. Preq., PRAV 242. Provides the student with approximately 60 hours of dual instrument flight instruction necessary to meet the FAA requirements for the Instrument rating. Special Fee.

303: Aerodynamics. 0-3-3. A study of advanced aircraft design, aerodynamics, and performance.

305: Jet Propulsion Systems. 0-3-3. Preq., PRAV 102. Theory of jet propulsion to include turbojet, turbofan, and turboprop engines.

315: Airport Planning & Management. 0-3-3. Provides the student with introductory exposure to the field and scope of airport planning and management.

316: Human Factors in Aviation. 0-3-3. For recognition of the comprehensive role of human factors in enhancing aviation safety.

320: Corporate Aviation. 0-3-3. Value/Benefit analysis of the corporate aviation decision. Topics include aircraft selection, flight department administration and operations, aircraft maintenance, FAA regulatory requirements, and future considerations.

322: Aviation Law. 0-2-2. Study of aviation law development and application. Case studies. Required for Airway Science curriculum.

331: Air Carrier Systems: 0-3-3. Study of air carrier operations to include flight planning, large airplane systems, and performance systems. A capstone course designed to prepare students for a career with a commercial carrier.

332: Air Carrier Operations. 0-3-3. Study of required pilot operations, dispatcher procedures, and FAA certification requirements.

340: Commercial Pilot Ground I. 0-3-3. Preq., PRAV 240. Aerodynamics, performance, instrumentation, stability and control, aircraft limitations, aircraft systems, aviation safety. Designed to meet FAA ground instruction requirements for Commercial Pilot Certificate.

341: Commercial Pilot Ground II. 0-2-2. Preq., PRAV 340. Advanced navigation, aircrew decision making, crew resource management, physiology of flight. FAA Part 121, 125, and 135 operations. Final preparation for FAA Commercial Pilot Certificate.

342: Commercial Pilot Flight I. 6-0-1. Preq., PRAV 341 or Private Instrument Certificate. Provides students with approximately 21 hours of flight instruction. Designed to meet the flight requirements for the FAA Commercial Pilot Certificate.

343: Commercial Pilot Flight II. 6-0-1. Preq., PRAV 342. Provides students with approximately 23 hours of flight instruction. Designed to meet the FAA flight requirements for the Commercial Pilot Certificate. Special Fee.

344: Commercial Pilot Flight III. 6-0-1. Preq., PRAV 343. Provides students with approximately 22 hours of flight instruction. Designed to meet the FAA flight requirements for the Commercial Pilot Certificate. Special Fee.

400: Multi-Engine Ground. 0-2-2. Preq., PRAV 341 and 343. Ground instruction for FAA Multi-Engine rating. Emphasizes systems, crew concept procedures, emergency procedures, performance, weight/balance and air carrier flight planning procedures.

405: Instrument Flight Instructor. 3-2-3. Preq., PRAV 414 and Certified Flight Instructor Rating and approval of Department Head. Provides students with fundamentals necessary to analyze and instruct instrument referenced flight maneuvers and procedures. Prepares student for FAA Instrument Flight Instructor rating (CFII).

407: The National Airspace System. 0-3-3. A survey course designed to instruct the student on the National Airspace Systems to include Air Traffic Control issues and procedures.

410: Multi-Engine Pilot Flight. 3-0-1. Preq., PRAV 400 or concurrent enrollment. Provides students with flight instruction necessary for FAA Multi-Engine rating. Special fee.

411: Instructor Pilot Flight. 3-0-1 (3). Preq., PRAV 414 or concurrent enrollment and a Commercial Instrument Pilot Certificate. Provides students with flight instruction necessary to meet the requirements for an FAA Flight Instructor Certificate (CFI). Special fee

414: Flight Instructor Ground. 0-3-3. Preq., PRAV 241 and 243 and a Commercial Instrument Pilot Certificate. Fundamentals of flight instruction and analysis of visual reference flight maneuvers. Preparation for FAA Instructor Pilot Certification (CFI).

415: Air Transport Pilot Flight. 3-0-1 (3). Preq., approval of Department Head. Provides the student with flight instruction necessary to meet the requirements for FAA Airline Transport certificates and ratings. Special fee.

419: Supervised Practice Flight/Ground Instruction. 3-0-1 (4). Preq., completion of PRAV 411 and 414. Directed observation and instructional critique of the student's performance in developing lesson plans and presenting actual flight and ground instruction.

440: Airline Economics and Management. 0-3-3. An advanced study of airline operation, fleet acquisition, management techniques, economic considerations, public benefits applications.

490: The Government Role in Aviation. 0-3-3. Preq., Senior standing. Historic, current and future governmental control. A study of congressional action, the NAS, the FAA, ICAO, and state and local aviation laws.

491: Aviation Safety. 0-3-3. Historical development of aviation safety, accident/incident analysis and reporting, introduction to accident investigation, human factors, accident prevention and development of aviation safety programs.

495: Aviation Professionalism. 0-3-3. Preq., senior standing. Study of aerospace industry and career opportunities. Emphasis on business climate and job acquisition. Overview of business, management, labor practices, and professional responsibility.

496: Internship in Aviation. 3-12 hours credit. Internship in area(s) of specialization. Supervised work in government or industry to gain experience in aviation fields. Minimum 90 clock hours; maximum 360 clock hours.

498: Independent Study. 0-3-3. Preq., Department Head's approval. Directed study of air transportation as part of a foreign and domestic, multi-model transportation system.

PSYCHOLOGY (PSYC)

102: General Psychology. 0-3-3. A survey of fundamental processes and concepts of human behavior.

202: Advanced General Psychology. 0-3-3. Preq., PSYC 102. An intensive survey of literature and procedures in general psychology.

204: Educational Psychology. 0-3-3. Education Majors only. A survey course designed to meet the needs of prospective teachers by bringing an application of psychological principles to the instructional setting.

205: Child Psychology. 0-3-3. Education Majors only. A study of the physical and mental growth of the child, the social, emotional, motor development, interests, and imaginative activities.

206: Adolescent Psychology. 0-3-3. Education Majors only. A study of the physical and mental growth of youth during the period of adolescence and the transition from childhood to adulthood.

207: Learning and Development. 1-3-3. An in-depth study of human development with emphasis on contemporary research relating to human learning and the application of psychological principles.

300: Elementary Statistical Methods in the Social Sciences. 0-3-3. A course designed to provide an orientation to statistical concepts used in the behavioral science field.

301: Fields of Psychology. 0-3-3. A study of the history of major fields and trends in psychology.

302: Physiological Psychology. 0-3-3. Preq., BISC 225 (or concurrent enrollment), PSYC 202. An intensive study of the physiology of the nervous system, and its relation to behavior.

303: Parapsychology. 0-3-3. Preq., PSYC 102 and 202 Critical examination of theoretical and methodological issues in the study of non-conventional sensory, perceptual, and cognitive processes.

304: Social Psychology. 0-3-3. Preq., PSYC 202. A study of the nature of social behavior, social stimulation and response; a psychological analysis of society and social institutions.

305: Practical Psychology. 0-3-3. Preq., PSYC 102. A survey of the practical application of psychological concepts to daily life. Emphasis on human social relationships, self-concept and personal growth.

307: Elementary Experimental Psychology. 3-2-3. Preq., PSYC 300. A beginning course in applying the scientific method to the problems of psychology.

310: Psychology of Personality. 0-3-3. Preq., PSYC 202. A study of major theories of personality.

312: Psychology of Learning. 0-3-3. Preq., PSYC 202. A survey of current theories of learning.

321: Psychological Testing. 0-3-3. Preq., PSYC 300. An introduction to the principles and practices of psychological testing and evaluation.

400: Behavior Modification. 0-3-3. Applied analysis to individual behaviors using concepts, and principles from experimental analysis of behavior. **(G)**

404: Seminar In Psychology. 0-3-3-(9). An intensive survey in selected current topics in the field of psychology. **(G)** (Graduate students should contact instructor for more specific criteria.)

407: Advanced Experimental Psychology. 3-2-3. Preq., PSYC 307. Emphasis on investigating specific learning, motivation, and perception topics from methodological and historical viewpoints.

408: Human Growth and Development. 0-3-3. A seminar for the study of human growth. **(G)**

411: Crisis Intervention. 0-3-3. Preq., 6 hours in PSYC and COUN 400 or approval of department head. Overview of theories, strategies, and service delivery systems in crisis intervention. **(G)**

414: Dynamics of Adjustment. 0-3-3. A comprehensive study of the problems of self-adjustment and self-management and the development of a well integrated personality. **(G)**

418: Abnormal Psychology. 0-3-3. Preq., PSYC 310 and 312. A study of the nature and development of abnormal behavior from a psychological viewpoint. **(G)**

450: Introduction to Clinical Psychology. 0-3-3. Preq., consent of instructor. Introduction to clinical psychology as a science and profession. Lectures, discussions, demonstrations, and field observations are provided for an overview of clinical psychology.

455: Environmental Psychology. 0-3-3. Preq., PSYC 102. A survey of concepts about individual's interaction with the physical environment. Emphasis is placed upon designing physical surroundings to serve social and personal needs.

459: Research Methods in Psychology. 0-3-3. Preq., PSYC 300. An examination of the practical problems of designing, conducting, and interpreting research and of the structure and organization of research writing.

460: Field Research in Psychology. 1 - 3 hours credit (9). Preq., PSYC 459. Consent of the instructor. Supervised practice in methods of field research as a basic tool of psychology. Each student develops and executes a field research project. May be repeated for a maximum of 9 hours credit.

461: Data Analysis and Interpretation. 1-3 hours credit (3). Preq., PSYC 300 or equivalent. A course designed to provide the skills necessary to use currently existing computer software to analyze data encountered in the social sciences.

465: Industrial Psychology. 0-3-3. The application of psychological findings and concepts to the industrial environment. **(G)**

469: Psychology of Sexual Behavior. 0-3-3. Preq., PSYC 102 and junior standing. Survey of both normal and abnormal sexual behavior and selected techniques employed in sex therapy and counseling. **(G)**

474: Psychology of Adult Learning and Development. 0-3-3. Provides understanding of cognitive and psychosocial development in young, middle, and later adulthood. Emphasis is on aging process and factors, which affect adult learning.

475: Death, Dying and Grievance Process. 0-3-3. Exploration of one's personal values toward death and the grieving process, funeral customs and practices, counseling the terminally ill, and various customs of death. Graduate students should contact instructor for more specific criteria. **(G)**

480: Psychology of Sex Roles. 0-3-3. Overview of psychology of sex roles including history, theory, methodology, sex differences, and implications for development, socialization, abnormal behavior, counseling and gender. **(G)**

484: Introduction to Human Relations. 0-3-3. An introduction to human relations factors in various work settings.

485: Industrial Behavioral Analysis. 0-3-3. Application to behavior change techniques in work settings. A study of how to effectively manage others' as well as one's own work habits.

486: Introduction to Decision Making. 0-3-3. An introduction to decision making models and methods.

487: Human Relations Communication. 0-3-3. A study of how communications influences human relation in different contexts.

490: Social and Psychological Aspects of Blindness. 0-3-3. Preq., enrollment in Educational Psychology Visual Impairments program or permission of instructor. Psychological and environmental aspects of blindness. Current and historical overview of practices & trends in the rehabilitation and education of individuals with visual impairments. **(G)**

499: Health Psychology. 0-3-3. Preq., PSYC 102. A survey of the systematic application of psychology to the relevant areas of health, disease and the health care system.

502: Cognitive Psychology. 0-3-3. Preq. enrollment in graduate program in psychology, counseling, or permission of instructor. Contemporary approaches to cognitive psychology; a broad survey of social cognition including attention, cognitive organization, mental reasoning, information processing, decision making, and human memory.

505: Theories in Marriage and Family Therapy. 0-3-3. An overview of marital development and change; principles of family dynamics and functioning.

506: Strategies for Marriage and Family Therapy. 0-3-3. Techniques for aiding married couples and families in distress; parenting strategies.

507: Learning and Development. 0-3-3. Provides an understanding of forces, which propel learning and development and enables teachers to help students successfully meet the unique demands of school.

508: Psychological Aspects of Disability. 0-3-3. An examination of attitudes, adjustment problems, sexuality, family and program implications for disabled populations.

509: Psychology of Aging. 0-3-3. An analysis of changes that occur in middle and late adulthood from psychological, cognitive, and social viewpoints.

510: Principles of Human Development. 0-3-3. Biological, psychological, and cultural interrelationships in human development.

512: Advanced Abnormal Psychology. 0-3-3. Preq., Enrollment in Counseling MA Program or permission of instructor. Comprehensive review of the major characteristics, etiology, and implications for treatment of the major psychological disorders. Clinical and research findings are emphasized.

513: Organizational Psychology. 0-3-3. A survey of current research and theories comprising organizational psychology. Critical-thinking skills are used to evaluate empirical research and current theories in the field.

516: Personnel Psychology. 0-3-3 Topics covered include the professional and legal requirements for personnel selection instruments; design and evaluation of personnel selection systems, designing and conducting job analyses and selection interviews.

517: Training and Development. 0-3-3. Provides the skills necessary to analyze, design, and evaluate training in organizations. Topics include determining training needs, task analysis, learning objectives, training methodologies, and evaluation.

518: Behavioral Analysis in Industry. 0-3-3. Application of behavioral analysis in industry. A study of concepts, principles, and skills essential for designing and implementing a behavior change plan in organizational settings.

519: Advanced Theories in Counseling. 0-3-3. Preq., COUN 508. Further analysis of theories of counseling as is evidenced by a review of current counseling literature.

522: Communication in Human Relations. 0-3-3. A review of the concepts, principles, and skills essential for effective communication in working with people.

523: Leadership and Decision-Making. 0-3-3. Examination of the various skills, behaviors, and attitudes required for effective leadership. Includes practices, decision-making, communication and ethical issues related to leadership.

524: Internship in Industrial/Organizational Psychology. 20-1-3 (6). Supervised experiences in an applied setting involving application of skills and field work in Industrial/Organizational Psychology.

533: Community Psychology/Rural Mental Health. 0-3-3. A study of community systems, intervention techniques, consultation methods, history and current status of the community mental health movement with particular emphasis on rural mental health research. Addresses psychological practice issues in the rural environment.

534: Psychology of Creativity. 0-3-3. Preq., enrollment in Educational Psychology or Counseling Psychology graduate programs or permission of instructor. Reviews theories, defining characteristics, and empirical research literature on the creative process. Identifies relationships of creativity to ability/personality variables, and measurement/research issues.

541: Research Methods in Behavioral Sciences. 0-3-3. Preq., PSYC 542. A study of the research methods and designs commonly used in the Behavioral Sciences. Emphasis on quantitative methodology and APA writing style.

542: Statistical Methods in Behavioral Sciences. 0-3-3. A study of the statistical methods used to study problems in Behavioral Sciences.

543: Psychometrics. 0-4-3. Preq., Graduate enrollment in I/O Psychology, Educational Psychology, or Counseling Psychology, or permission of instructor. Test and measurement theory, including classical, true score, and item response theory models. Covers reliability, validity, scaling, norms, and score transforming issues.

544: Qualitative Research Methods. 0-3-3. Concepts and applications of qualitative research methods including techniques for data collection and analysis are explored.

580: Developmental Psychology of Blindness. 0-3-3. This course emphasizes knowledge of physical, social, and emotional development of the blind including acquisition of motor, language, and cognitive skills, birth through adulthood.

589: Special Topics in Psychology. 1-4 hours credit, may be repeated. Preq., enrollment in relevant graduate program in Psychology or permission of instructor. Current or specialized topics in psychology.

599: Master's Thesis. 0-3-3 (6 hours minimum). Original research conducted under the supervision of a departmental faculty member in the student's program area. Student must be enrolled whenever university facilities or faculty are used. (Pass/Fail).

600: Seminar: Issues in Academic Psychology & Teaching. 0-1-1 (9). May be repeated. Required of resident Counseling Psychology PhD students each quarter. Study of professional issues and research applications in counseling psychology. **Non-degree credit.**

601: Historical Foundations of Modern Psychology. 0-3-3. Historical development of psychology from its philosophical beginnings to the present.

602: Physiological Psychology. 0-3-3. A study of the neuroanatomical and neurochemical bases of behavior; contributions of physiological processes to fundamental behavioral processes.

603: Sensation and Perception. 0-3-3. Sensory and perceptual phenomena that influence motivation, cognition, and learning.

604: Theories of Social Psychology. 0-3-3. Theory and research concerning interpersonal perceptions, attitude formation and change, social motivation, and interactive processes.

605: Child Psychopathology. 0-3-3. Examines diagnosis and treatment of child and adolescent disorders from empirical, theoretical, and practical viewpoints.

606: Comparative Psychology. 0-3-3. A study of the phylogenetic bases of behavior. Interspecies behavioral similarities and differences are examined as they relate to human behavior.

607: Fundamentals of Psychopharmacology. 0-4-3. Preq., enrollment in Ph.D. program in Counseling Psychology or permission of the instructor. Biochemical substrates of emotion, affect, and behavior are reviewed. Psychopharmaceutical mechanisms and intervention strategies are emphasized along with a review of the treatment research literature

608: Developmental Psychology. 0-3-3. An advanced theory and research based study of the biological, psychological, social, and cultural processes in human growth and development. Counseling Psychology PhD students only.

609: Personality Theory. 0-3-3. Comparative approach to personality theory from the framework of philosophical issues, definitional problems, and current research issues.

610: Professional Issues and Ethics. 0-3-3. An investigation of legal and ethical issues relevant to the practice of counseling psychology.

611: Advanced Group Counseling and Psychotherapy. 2-3-3. Group counseling theories with emphasis on advanced techniques and application, ethical responsibilities, and current trends with group research methodology. Practicum experience required.

612: Advanced Learning Theory. 0-3-3. Psychological aspects of learning, including theoretical and practical applications.

613: Career Assessment and Counseling. 4-3-4. Preq., enrollment in Counseling Psychology Ph.D. program, PSYC 531, 616, and 617. Assessment and counseling of career clients using interest, ability, and personality tests.

614: Professional Seminar in Counseling Psychology. 0-3-3. Preq., Counseling Psychology PhD students only. A survey of trends and issues pertinent to the professional activities of counseling psychologists.

616: Intellectual Assessment. 0-3-3. Preq., Enrollment in Counseling Psychology PhD program and approval of instructor. This course focuses on psychological assessment and interpretation of tests of ability, achievement, and higher cognitive functions. Differential psychodiagnosis and formal report writing are emphasized.

617: Personality Assessment: Objective and Projective. 0-3-3. Preq., approval of instructor. This course focuses on psychological assessment using tests of personality, DSM-IV psychodiagnosis, and DSM-IV Axis II disorders. Psychological report writing and interpretation are emphasized.

618: Motivation. 0-3-3. The study of levels of motivation from ethological to cognitive-social motives; relevant motivational theories are used to explain human behaviors.

619: Psychopathology. 0-3-3. Comprehensive review of the etiology of psychological disorders and their diagnosis; clinical research findings are emphasized.

620: Sex Roles and Behavior. 0-3-3. An investigation of the effect of gender upon cognition, affect, and behavior.

621: Career Development Theories. 0-3-3. Preq., Counseling Psychology PhD students only. Intensive review of theories and research literature on career development across the life span. Application of theories to current career- and work-related problems.

622: Theories of Counseling and Psychotherapy. 0-3-3. Preq., Counseling Psychology PhD students only. A comparative approach to theories of counseling and psychotherapy at an advanced level.

623: Integrative Assessment. 0-3-3. Preq., PSYC 616 & 617, Counseling Psychology PhD students only. Emphasis on selection, administration, and combination of results from various assessment instruments into an integrated whole. Integrative report writing is emphasized.

624: Counseling Psychology Internship. 1-3 hours credit. Minimum credit allowed is 12 hours. Preq., completion of departmental requirements and approval of Counseling/Psychology Program Director and Department Head. One calendar year (or two half-years) of supervised full-time, counseling psychology experience in a Department-approved (typically, APA-approved) internship facility.

625: Research Seminar. 0-3-3. Preq., Counseling Psychology PhD students only, or signature of instructor. Integration of research design, methodology, and statistics in psychological research.

627: Advanced Assessment Topics. 0-3-3 (9). Preq., Counseling Psychology PhD students only. A rotating topics course providing advanced training in selected assessment instruments and processes. May be repeated twice.

628. Special Topics in Psychology. 1-3 hours credit (9). May be repeated. Counseling Psychology PhD students only or permission of instructor. Intensive study of a selected topic in psychology.

629: Advanced Seminar in Counseling Theories & Techniques. 0-3-3 (9). May be repeated. Preq., Counseling Psychology PhD students only. A rotating topics course providing advanced study of selected counseling theories and therapeutic techniques.

630: Supervision in Counseling & Psychotherapy. 0-3-3. Preq., Counseling Psychology PhD students only. Overview of supervision/consultation models, including application of principles to clinical practice.

632: Psychotherapy Research. 0-3-3. Preq., Counseling Psychology PhD students only. Investigation of research on change elements and outcome research in psychotherapy, including factors impacting change processes and cost-benefit issues raised by managed mental health care.

641: Advanced Experimental Design and Analysis. 0-3-3. Theory and technique for maximizing the validity of psychological experiments and analyzing results via ANOVA, factorial ANOVA, ANCOVA, repeated measures ANOVA, and higher-order analyses.

642: Advanced Statistical Methods. 0-3-3. Techniques such as multiple regression, canonical correlation, discriminant analysis, MANOVA, and factor analyses in behavioral research are present.

643: Multivariate Statistics. 0-4-3. Advanced multivariate topics including multiple regressions, factor analyses, MANOVA, multi-dimensional scaling, structural equation modeling, path analysis, discriminant analysis, and meta-analyses.

650: Practicum in Counseling Psychology. 3 hours credit (9). May be repeated. Supervised counseling experience within a practicum setting.

651: Advanced Practicum in Counseling Psychology. 1-3 hours credit (9). Preq., PSYC 650 (9 hours total). May be repeated. Progressive development of advanced clinical skills within an approved practicum setting. Counseling Psychology PhD students only.

652: Field Placement in Practicum Setting. 1-3 hours (18). May be repeated. PSYC 650 & 651 (three quarters each), Counseling Psychology PhD students only. Advanced practicum in a field setting.

660: Dissertation Research. 1-3 hours credit. Proposal, research, and defense of original doctoral-level research study. May be repeated each quarter for 3 credit hours per quarter. Minimum credit allowed is 6 hours. Enrollment is minimally required during the term in which the dissertation proposal is defended and the term in which the dissertation research is defended.

QUANTITATIVE ANALYSIS (QA)

233: Basic Business Statistics. 0-3-3. Preq., MATH 111 or 125. Descriptive statistics, probability, sampling distributions, confidence intervals, inference, and regression and correlation. Emphasis is given to business applications.

390: Quantitative Methods for Business and Economics. 0-3-3. Preq., junior standing. Presentation and review of pertinent quantitative topics to furnish the necessary background for the graduate quantitative methods field of study.

430: Management Science Methods. 0-3-3. Preq., MGMT 333. Linear programming including sensitivity analysis, the transportation problem, inventory analysis, and PERT.

432: Intermediate Business Statistics. 0-3-3. Preq., QA 233. Applied statistical methods utilizing the computerized Statistical Analysis System; multiple regression and correlation, Chi-Square, analysis of variance, and non-parametric methods. **(G)**

522: Advanced Business Statistics. 0-3-3. Preq., QA 432. Applied statistical methods utilizing the computerized Statistical Analysis System (SAS): multiple regression and correlation, biased regression, analysis of variance, multiple comparisons, and non-parametric methods.

525: Quantitative Approaches for Decision-Making. 0-3-3. Preq., QA 233 and QA 390 or consent of instructor. Survey of the quantitative and statistical methods for managerial decision making.

540: Advanced Management Science Methods. 0-3-3. Preq., QA 430 or consent of instructor. Quantitative decision-making including linear, integer and parametric programming; project planning and scheduling with CPM/PERT and MAP as applied to business management.

550: Directed Study in Quantitative Analysis. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of quantitative analysis.

605: Methods of Business Research. 0-3-3. Preq., QA 522 or consent of instructor. Formulation of statistical hypotheses germane to business research. Determination of the experimental conditions and extraneous conditions. Methods of measurement and the statistical analysis required.

610: Multivariate Statistics: Business Applications. 0-3-3. Preq., QA 522. Regression extensions, canonical correlation, multivariate ANOVA, discriminant, business applications, principal components using SAS, SPSS, and BMD, factor and cluster analysis.

620: Seminar in Management Science. 0-3-3. Study of current topics in the discipline of Management Science. In-depth analysis of a specialized field along with an investigation of the literature.

622: Advanced Business Statistics. 0-3-3. Preq., QA 432. Requires Doctoral standing. May require additional class meetings. Applied statistical methods utilizing the computerized Statistical Analysis System (SAS): multiple regression and correlation, biased regression, analysis of variance, multiple comparisons, and non-parametric methods. Credit will not be given for QA 622 if credit is given for QA 522.

640: Advanced Management Science Methods. 0-3-3. Preq., QA 430 or consent of instructor. Requires Doctoral standing. May require additional class meetings. Quantitative decision-making including linear, integer and parametric programming; project planning and scheduling with CPM/PERT and MAP as applied to business management. Credit will not be given for QA 640 if credit is given for QA 540.

650: Directed Study in Quantitative Analysis. 1-3 hours credit. Hours and credits to be arranged. Consent of instructor and approval of department head required. Special problem or specific area of quantitative analysis.

685: Comprehensive Exam in Quantitative Analysis. No credit. Doctoral standing required. Required for all business administration doctoral students seeking to take the comprehensive exam in quantitative analysis. Successful completion is a prerequisite to the oral comprehensive exam for those seeking a primary field or examined minor in quantitative analysis. Requires consent of graduate director.

READING (READ)

099: Developmental Reading. 0-3-3. Builds reading fundamentals that are essential for comprehension of college-level textbooks. Develops skills in word recognition, comprehension, functional reading, vocational, library and reference skills. (Pass/Fail)

200: Reading Skills Improvement. 0-3-3. This course is designed to assist any student who would like to improve basic reading skills. Emphasis on comprehension, concentration and speed.

RUSSIAN (RUSS)

101: Elementary Russian I. 0-3-3. Introduction to contemporary spoken and written forms of Russian; emphasis on communicative competence.

102: Elementary Russian II. 0-3-3. Preq., RUSS 101. Continuation of introduction to contemporary spoken and written forms of Russian; emphasis on communicative competence.

201: Intermediate Russian I. 0-3-3. Preq., RUSS 102. Study of the more complex grammatical structures of Russian; emphasis on developing communicative competence and basic skills in reading and writing.

202: Intermediate Russian II. 0-3-3. Preq., RUSS 201. Study of the more complex grammatical structures of Russian; emphasis on developing communicative competence and basic skills in reading and writing.

203: Intermediate Russian III. 0-3-3. Preq., RUSS 202. Study of the more complex grammatical structures of Russian; emphasis on developing communicative competence and basic skills in reading and writing.

301: Russian Conversation. 0-3-3. Preq., RUSS 203. Emphasis on developing conversational fluency in Russian in a variety of academic and social contexts.

302: Russian Composition. 0-3-3. Preq., RUSS 203. Development of skills in writing Russian in a variety of academic and social contexts.

303: Russian Phonetics. 0-3-3. Preq., RUSS 203. Intensive study of the Russian phonological system; exercises for refining skills in pronunciation, intonation, and stress patterns.

310: Russian Short Prose Fiction. 0-3-3. Preq., RUSS 301 or permission of department head. In Russian. Russian short story, skazka, rasskaz, povest' and the novella. Includes works by Pushkin, Gogol, Lermontov, Chekhov, Babel, Rasputin, Tolstaya, Makanin, and others.

425: Russian Literature in English Translation. 0-3-3 (6). Representative works of Russian literature from the 19th and 20th centuries; repeatable for credit with different course content. May not be counted towards a minor in Russian. Also listed as ENGL 425. **(G)**

SOCIAL SCIENCE (SOSC)

470: Senior Reading Program. 3 hours credit (9). A reading/research course optional for all majors in geography, political science, and sociology.

SOCIOLOGY (SOC)

201: Principles and Elements of Sociology. 0-3-3. An introduction to the structures and processes of group behavior.

202: Social Problems. 0-3-3. Selected social problems in contemporary American society.

205: Introduction to Anthropology. 0-3-3. Introduction to the origin and development of man; the nature and development of culture.

210: Introduction to Criminal Justice. 0-3-3. A survey of the criminal justice system, its history and organization at the local, state and federal levels.

230: The Social Welfare System in the United States. 0-3-3. A study of the social welfare system and the effort to prevent or resolve social problems encountered by individuals, groups, families, and communities.

304: Social Psychology. 0-3-3. Preq., PSYC 102 or SOC 201. A study of the nature of social behavior; a psychological analysis of society and social institutions.

306: Juvenile Delinquency. 0-3-3. Preq., PSYC 102 or SOC 201 or 202. The nature, causes, extent, and methods of treatment of juvenile delinquency.

308: The Family. 0-3-3. A study of the family as a social institution with comparisons of family life in various societies.

312: Race and Ethnic Relations. 0-3-3. Preq., SOC 201. Factors & conditions which underlie disagreement about fundamental values; their relation to social maladjustment; evaluation of theories; group approaches to reintegration.

313: The Sociology of Deviance. 0-3-3. Factors and conditions which underlie disagreement about fundamental values; their relation to social maladjustment; evaluation of theories; group approaches to reintegration.

314: Criminology. 0-3-3. Theories of the origins of crime; analysis of specific types of offenders, prevention, control, and treatment.

320: Research Methods. 0-3-3. Preq., Statistics course or consent of instructor. Scientific methods and their application in social analysis; procedures in testing sociological theory; computer and data analysis.

330: An Introduction to Social Work. 0-3-3. An examination of Social Work within the social welfare system. A review of the multiple roles of the social worker in service delivery and practice.

340: Urban Sociology. 0-3-3 . Preq., SOC 201. The influence of socio-cultural factors and their consequences for urban America.

345: Social Stratification. 0-3-3. Types and results of social inequality; social class, status and power as determinants of behavior, values and life chances.

401: Social Theory. 0-3-3. Preq., SOC 201, Junior standing or consent of instructor. The development of sociological theory and its relation to research.

410: Family Violence. 0-3-3. A sociological examination of the types, extent, causes, and consequences of violence between family members and intimate partners; policy implication are explored.

416: Sociology of Education. 0-3-3. The education system and the larger society; education as a social structure and process; implications for students, parents, teachers, and administrators.

418: Social Control. 0-3-3. Preq., SOC 201. Informal and formal regulative processes in social behavior, with reference to techniques and processes of social control.

420: Treatment of Offenders. 0-3-3. Preq., SOC 314. A study of principles of treatment of offenders; application of social science principles to treatment of offenders; interviewing, guidance, and counseling of offenders.

424: The Sociology of Corrections. 0-3-3. Trends, issues and problems in the field of corrections.

425: Family Therapy. 0-3-3. Preq., SOC 201 or FCS 210 or SOC 308. A survey of family therapy; the family as a system; theoretical models of modern practice, state laws and policies; code of ethics governing family therapy.

435: Sociology of Aging. 0-3-3. Preq., SOC 201 or consent of instructor. Social and biological problems as a consequence of aging. Current issues, deficiencies and resources available to deal with specific problems.

436: Grieving and Loss. 0-3-3. An analysis of loss, grief and bereavement. An assessment of services, programs, treatments, stress reduction techniques and communication skills.

437: Retirement and Community. 0-3-3. Preq., SOC 201 or consent of instructor. Seminar for advanced students. An examination of retirement and the various environments in which people age.

438: Illness & Healing. 0-3-3. A sociological examination of the illness experience, and social and ethical aspects of treatment.

444: Substance Abuse. 0-3-3. Social, cultural and individual problems associated with alcohol and drug use. Family and other group responses. The nature and treatment of alcoholism and drug addiction.

450: Sociology of Religion. 0-3-3. Seminar for advanced students in social sciences. An examination of religion as a multilevel sociological phenomenon.

455: Social Movements and Collective Behavior. 0-3-3. Preq., SOC 201. Seminar for advanced students in social sciences. Social movements and collective behavior as studied in sociology, such as fads, migrations, mass hysteria, disaster reactions, and riots.

SPANISH (SPAN)

101: Elementary Spanish. 0-3-3. Conversation reading and grammar. Non-native speakers only.

102: Elementary Spanish. 0-3-3. Preq., SPAN 101. Conversation reading and grammar. Non-native speakers only.

201: Intermediate Spanish. 0-3-3. Preq., SPAN 102. Structure, cultural reading, conversation. Non-native speakers only.

202: Intermediate Spanish. 0-3-3. Preq., SPAN 201. Structure, cultural reading, conversation. Non-native speakers only.

301: Spanish Conversation and Composition. 0-3-3. Preq., SPAN 202. Non-native speakers only. Conversation on everyday topics and review of elements of Spanish through structured compositions.

302: Spanish Conversation and Composition. 0-3-3. Preq., SPAN 202. Non-native speakers only. Conversation on everyday topics and review of elements of Spanish through structured compositions.

380: Readings in Spanish Literature. 0-3-3. Preq., SPAN 301 and/or 302 or permission of department head. Required for major in Spanish. A survey of the masterpieces of Spanish literature.

381: Readings in Spanish American Literature. 0-3-3. Preq., SPAN 301, 302 or permission of department head. Required for major in Spanish. Survey of the masterpieces of Spanish American literature.

403: The Novel in Spain. 0-3-3. Preq., SPAN 380, 381 or permission of department head. Study of the novel in Spain from the sixteenth century to the present.

405: The Modern Drama of Spain. 0-3-3. Preq., SPAN 380, 381 or permission of department head. Study of the drama in Spain in the 19th and 20th centuries.

407: The Novel of Latin America. 0-3-3. Preq., SPAN 380, 381 or permission of department head. Study of representative novels of Latin America. Mexico excepted.

408: Spanish Civilization. 0-3-3. Preq., SPAN 380, 381 or permission of department head. Lectures and readings in Spanish history, geography, government, language, music art, etc.

425: The Novel in Mexico. 0-3-3. Preq., SPAN 380, 381 or permission of department head. A study of outstanding novels from 1800 to the present.

426: Spanish Literature in English Translation. 0-3-3 (6). Representative works of Spanish literature from the Middle Ages to the 20th century. Offered in English translation; repeatable for credit with different course content. May not be counted towards a major or minor in Spanish. Also listed as ENGL 426. (G)

427: Latin American Literature in English Translation. 0-3-3 (6). Representative works of 20th century Latin American literature; repeatable for credit with different course content. May not be counted towards a major or minor in Spanish. Also listed as ENGL 427.(G)

450: The Spanish Language. 0-3-3. Preq., 21 hours of Spanish or permission of department head. Advanced grammar. General characteristics of the language, including sources, etymology, dialects.

460: Applied Linguistics for Spanish. 0-3-3. Preq., SPAN 450 or permission of department head. Pertinent theories of psycholinguistics and sociolinguistics. Contrastive study of Spanish and English patterns and structures.

480: Commercial Spanish. 0-3-3. Preq., SPAN 450 or permission of department head. Study of common commercial forms for use in Spanish correspondence and business.

SPECIAL EDUCATION (SPED)

300: Introduction to Exceptional Students. 0-3-3. A survey of the physical, emotional, social, and learning characteristics of exceptional students; educational programs; incidence and prevalence.

301: Specific Learning Problems in Students. 0-3-3. Preq., SPED 300. Learning principles, issues, specific deficits in learning; assessment and remediation of problems in visual and auditory perception, cognitive processes, language; gross and fine motor coordination.

302: Characteristics of Exceptional Students. 0-3-3. Preq., SPED 300. Specific problems in cognitive, language and social skills related to academic and vocational training, special educator's role in management, planning, and resource or community interaction.

303: Characteristics of Severely and Profoundly Handicapped Students. 0-3-3. Preq., SPED 300. An overview of education of student classified as severely and profoundly handicapped, including educationally relevant physical, cognitive and behavioral characteristics.

325: Introduction to Mental Retardation. 0-3-3. Preq., SPED 301. Medical, psychological, social, and educational aspects of mental retardation.

335: Information on Childhood Diseases and Crippling Conditions. 0-3-3. Emphasis on orthopedic conditions and chronic medical health problems with implications for education, psychology, social work, and occupational, physical, and speech therapy.

340: Management of Behavior Disorders. 4-2-3. Preq., SPED 300. Foundations of behavioral science, operant analysis of human behavior, learning principles, behavior modification principles and techniques; educational programs, supervised application of skills and techniques covered.

341: Psycho-social Management of Exceptional Students. 4-2-3. Preq., SPED 300. Non-behavioral teaching interventions emphasizing biophysical, psychodynamic, sociological, and ecological strategies; supervised application of skills and techniques using an instructional model that synthesizes strategies covered.

360: Education of the Partially Seeing Child. 0-2-2. Preq. SPED 301. Learning behavior, curriculum adaptation, educational programs, environmental movement and control, and behavioral characteristics of children with visual impairment.

375: Education Procedures and Materials in Special Education. 4-2-3. Preq., SPED 300 and 302 or permission of instructor. Educational procedures in developing and implementing curricula in the areas of self-help, language, social skills, motor skills, vocational skills, cognitive skills, and functional academics.

376: Materials and Methods for Severely and Profoundly Handicapped Students. 4-2-3. Preq., SPED 303 or permission of instructor. Educational procedures in developing and implementing curricula in the areas of self-help, language, social skills, motor skills, vocational skills, cognitive skills, and functional academics.

460: Introduction to the Education of Exceptional Preschool Children. 2-3-3. An introduction to the nature and needs of preschool handicapped children. Students will review literature, publications, trends, and model programs. (G)

461: Teaching Strategies for Exceptional Preschool Children. 4-2-3. Preq., SPED 300, 460, and FCS 301. Emphasis on specific programs, materials and strategies for teaching young preschool children who have serious handicapping conditions. Areas covered include perceptual, motor, and intellectual development. (G)

462: Language and Cognitive Development in Exceptional Preschool Children. 4-2-3. Preq., SPED 461. An emphasis on the identification, assessment and remediation of problems in language and cognitive development of preschool handicapped children.

463: Early Identification and Evaluation of Exceptional Children. 4-2-3. Preq., SPED 460. Early identification and evaluation principles and procedures, parent interviews, norm-and criterion-referenced measure; diagnostic evaluation assessment incorporated into individualized educational planning. (G)

464: Parent Involvement and Community Resources for Education for the Exceptional Student. 0-3-3. Preq., SPED 300 and 460. Parent-teacher duality roles and the dyadic process between student and teacher; material planning and implementation by parents through teacher modeling; community services. (G)

465: Interagency Services in Special Education. 4-2-3. Preq., SPED 300 and 460. Study of related services to the handicapped, team control and contributions, strategies used in integrating overall life-experience planing and implementation. (G)

471: Prevocational Skills and Procedures for Exceptional Students. 4-2-3. Preq., SPED 375 and 475. Competency-based prevocational education incorporated with curriculum design and informal assessment; long-term planning for vocational needs, occupational guidance.

477: Advanced Procedures in Educating Severely and Profoundly Handicapped Students. 4-2-3. Preq., SPED 303 and 376 or permission of instructor. Diagnostic-prescriptive teaching procedures for educating severely and profoundly handicapped students, including criterion-referenced assessment procedures and individualized educational programming. (G)

490: Psycho-social and Educational Appraisal of Exceptional Students. 3-2-3. Preq., EDUC 402 and SPED 300 or consent of instructor. Concepts of measurement applied to exceptional students; normative assumptions; measures of receptive and expressive language; social maturity; and perceptual-motor functions, observations of procedures. (G)

495: Psycho-social and Educational Appraisal of Exceptional Students II. 7-2-3. Preq., SPED 490. Supervised administration of individual diagnostic tests, developmental scales, measure for the handicapped, interpretation and application to individualized educational planning and report writing. (G)

500: Curriculum Design for Exceptional Students. 4-2-3. A examination of issues and strategies required in selecting and developing curriculum for exceptional students. Emphasis on the scope and sequence of curriculum for all areas of exceptional students.

501: Contemporary Issues in Special Education. 0-3-3 (6). Historical and comparative approaches to theoretical issues and research, critical examination of assumptions, sampling, and tactics of research.

503: Educationally Disadvantaged. 0-3-3. Biological, learning, interpersonal, and motivational determinants of behavior, cultural deprivation as a factor in school learning; educational implications.

510: The Exceptional Adolescent Student. 0-3-3. Advanced course designed to acquaint the student with the complex challenges of the exceptional adolescent. Emphasis on remedial efforts, pre-vocational and vocational skills needed by the exceptional adolescent.

517: Curriculum for the Gifted/Talented. 0-3-3. Preq., consent of area coordinator. Curriculum models in gifted/talented education, emphasizing essential principles and skills necessary for designing, implementing, and evaluating educational plans for gifted/talented students.

520: Advanced Study: Mental Retardation. 0-3-3. Preq., EDUC 541 and SPED 501. Advanced study of the biological, social, and psychological factors in retarded behavior.

530: Advanced Study: Nonsensory Physically Impaired. 0-3-3. Preq., EDUC 541 and SPED 501. Advanced study of the biological, social and psychological factors in crippling conditions and special health problems.

540: Advanced Study: Behavior Disorders. 0-3-3. Preq., EDUC 541 and SPED 501. Advanced study of the biological, social, and psychological factors in behavior disorders.

560: Administration in Special Education. 0-3-3. The major administrative and supervision functions necessary for the effective operation of special education programs and the major areas of knowledge necessary to carry out these basic functions.

562: Advanced Study: School-Related Language Problems in Special Education. 0-3-3. Analysis of language deviations and disorders in

classroom situations, understanding of assessment, approaches and models for remediation/enrichment. Intervention and flexibility in curriculum development.

570: Advanced Study: Learning Disabilities. 0-3-3. Advanced study of the biological, social, and psychological factors in learning disabilities.

575: Behavior Technology in Special Education. 3-2-3. Preq., SPED 475. Remediation of severe learning and behavior problems in students through programming and behavior modification; use of automated equipment for direct control of stimuli and contingencies.

SPEECH THEATRE (SPTH)

101: Stagecraft. 4-2-3. Practical experience in scenery construction, painting, stage lighting, and organizational techniques.

201: Introduction to Theatre. 0-3-3. A comprehensive overview of the elements that comprise the theatre; intended as a basic preparation for an understanding of theatre art.

240: Acting. 4-2-3 (9). Basic training in the art of acting with emphasis upon physical and vocal skills as well as fundamentals of relaxation and public performance.

290: Theatre Appreciation. 0-3-3. A study of Theatre and its different forms and how they affect our life and society.

307: Play Production. 3-3-3 (9). Preq., SPTH 201, 240, or 409. The director's introduction to play production: script analysis, research, staging, actor coaching, scenery, lighting, and costuming.

400: Stage Makeup. 3-0-1. Practical experience in the design and application of stage makeup. **(G)**

402: Advanced Acting. 8-1-3 (9). Preq., SPTH 240 or consent of instructor. A study in the practice of the major period styles of acting from ancient Greece to the present. **(G)**

403: Stage Lighting. 4-2-3. Preq., SPTH 201 or consent of instructor. Practical and theoretical experience in stage lighting, design, and equipment. **(G)**

404: Theatre Practicum. 4-0-1 (12). Practical experience in interpretation, acting, directing, or technical theatre.

405: Scene Painting. 3-0-1. Preq., SPTH 101. Practical experience in the art of scene painting, using both historical and modern techniques and solutions. **(G)**

407: Play Direction. 3-3-3 (9). Preq., SPTH 307. Advanced course in directing methodologies, including the practical experience of directing a publicly performed short play. **(G)**

408: Technical Direction and Stage Technology. 4-2-3. Preq., SPTH 101. Practical experience in advanced theories of stage technology, shop management, budgeting, cost effective solutions and construction practices. **(G)**

409: Stage Management. 0-3-3. Preq., SPTH 201. A study of the responsibilities, organization, and methods used in the operations of the stage manager in theatre. **(G)**

410: Studies in Scene and Costume Design. 0-3-3. Preq., SPTH 201 or consent of instructor. A study of the theories of color, design, rendering, graphic techniques, and perspective as they pertain to scene and costume design for the stage. **(G)**

414: Sound for the Theatre. 4-2-3. Preq., SPTH 201 or consent of the instructor. Practical and theoretical experience in sound reinforcement, design, and equipment, and their uses in both commercial and non-commercial stage. **(G)**

415: Shakespeare. 0-3-3. The major plays and the poems. (Same as English 415.) **(G)**

423: Dance for the Theatre. 3--1-1 (3). A course in the advanced movements of Ballet, Jazz, and Modern Dance that are used in musical Theatre. **(G)**

427: Movement for the Stage. 3-1-1 (6). A performance class that introduces traditional techniques of movement styles for the stage and offers a survey of contemporary movement theory. **(G)**

428: Contemporary Developments in Theatre. 0-3-3. A study of theatre development since 1900. This course will cover trends, movements, and genres in all areas of theatre. **(G)**

434: History of the Theatre I. 0-3-3. Study of the theatre from ancient origins through the Restoration. Focus on literature, production, style, performance, and historical context. **(G)**

435: History of the Theatre II. 0-3-3. Study of the theatre from the 18th Century to 1960. Focus on literature, production, style, performance, and historical context. **(G)**

471: The Craft of Dramatic Writing. 0-3-3. An introduction to writing for the actor with emphasis on projects aimed at focusing on the structures of character, action, and dialogue. **(G)**

472: Advanced Dramatic Writing. 0-3-3 (6). Preq., SPTH 471 or signature of instructor. Studies in the craft of dramatic writing with varying areas of concentration including research, adaptation, writing for the screen, stage, radio, video, etc. **(G)**

480: Voice for the Stage. 0-3-3. A study of the use and training of the human voice for performance utilizing the Lessac system of voice training. **(G)**

490: Arts Management. 0-3-3. An overview of arts management in the fields of performing and visual arts. Included are basic management principles, personal management, and organizational structures and procedures. **(G)**

491: Promotion. 2-3-3. Study of promotional theory that enables students to design, produce and evaluate promotional campaigns for fine arts institutions and events. **(G)**

502: Studies in Scene Design. 0-3-3. Preq., SPTH 401. A seminar course in the theory, practice, and history of scene design for the theatre.

503: Studies in Lighting Design. 0-3-3. Preq., SPTH 403. A seminar course in the history, theory, and practice of lighting design for theatre, opera, dance, and other media.

511: Studies in Stage Costuming. 0-3-3. Preq., SPTH 406. A seminar course in the history, theory, and practice of design and construction of stage costumes.

515: Theatre Management. 0-3-3. Preq., SPTH 491. Study of theatre management concentrating on organization of business and administrative areas of theatre.

516: Arts Administration. 0-3-3. Study of arts administration concentrating on the theories and practices involved in the business aspects of theatre.

518: Interpretation of Contemporary Drama. 0-3-3. Preq., SPTH 315 and 319. A study of American and European drama from 1940 to the present.

531: History of Drama. 0-3-3. Preq., SPTH 424. A survey of dramatic literature from ancient times to the present.

533: Theories of Performance. 0-3-3. A seminar course examining the theories of major innovators in acting and directing from the ancient Greeks to the present.

536: Analysis and Criticism of Drama. 0-3-3. A seminar course in the theory of critical analysis of drama from Aristotle to the present.

SPEECH (SPCH)

110: Principles of Speech. 0-3-3. Designed to develop the principles of effective oral communication in typical speaker-audience situations, through practice in informative and persuasive speaking. (Cannot be taken for credit if student has credit for SPCH 377.)

202: Supervised Observation. 3-0-1. This course is designed to provide students with supervised observation of diagnostic and therapy sessions with clients who present speech, language and/or hearing disorders.

210: Introduction to Communicative Disorders. 0-3-3. A study of the various disorders of communication, their nature, etiology, and treatment.

211: Public Speaking. 0-3-3. Preq., SPCH 110 or permission of instructor. This course is concerned with developing advanced skill in special occasion speeches, the book review, the entertaining speech, and effective reading from an original speech.

222: Phonetics. 0-3-3. Principles of phonetics; articulatory phonetics; description and classification of sounds; transcription at different levels of detail; production and perception included.

260: The Mass Media. (0-3-3). Consideration of these media from the viewpoint of their audience; emphasizes the development of objectivity standards for evaluating mass communication. Open to all students.

300: Discussion and Debate. (0-3-3). A study of the principles of group discussion and debate with practical experience in each.

301: Anatomy and Physiology of the Speech and Hearing Mechanism. 0-3-3. Functional anatomy and physiology of those structures associated with speech production and reception.

302: Introduction to Speech and Hearing Science. 0-3-3. Comprehensive survey of the communicative process from the speaker to the listener, speech production, acoustics, and speech perception.

308: Dactylology. 0-2-2. An introductory course in manual communication of the deaf; emphasis on drills and exercises to help students acquire a sign vocabulary and conversational fluency.

312: Clinical Procedures. 7 1/2-2-4. Students are taught principles and procedures used with clients with speech disorders through lecture, observation and supervised clinical experience.

315: Oral Interpretation of Literature. 0-3-3. Preq., SPCH 110. Advised, SPCH 211. The development of responsiveness to prose, poetry, and drama, and the ability to communicate the logical emotional and aesthetic elements to others.

325: Introduction to Communication Research Methods. (0-3-3). A study of the goals and methods of research with emphasis on understanding the nature and structure of communication.

377: Professional Speaking. 0-3-3. Designed to establish a foundation for effective speaking in informative speaking, in the interview, and in communication from the manuscript. (Cannot be taken for credit if student has credit for SPCH 110.)

411: Diagnostic Procedures. 0-3-3. Principles and procedures for differential diagnosis of speech and language disorders. Administration and interpretation of various tests, parent interviewing, and clinical observation of behavior.

413: Articulation. 0-3-3. A study of the nature, etiology, and retraining procedures related to defective articulation with emphasis on current research.

417: Seminar in Speech Communication. (0-3-3). Selected current issues/topics in an identified area of theory or application within the field of Speech Communication.

418: Language Disorders in Children. 0-3-3. Preq., SPCH 470. A beginning course in the study of language disorders in children with emphasis on evaluation and treatment procedures.

430: Nonverbal Communication. 0-3-3. Study of the effects of space, physical properties of persons, movement, eye and vocal behavior on interpersonal communication.

431: Organizational Communications. 0-3-3.Focuses on the factors related to communication processes within government, private, and volunteer organizations.

433: Applied Organizational Communication. (0-3-3). Application of communication practices in organizational settings including the practical considerations that arise in conducting communication surveys.

440: Interpersonal Communication. 0-3-3. Study of the verbal and nonverbal dimensions of interpersonal relationships including dialogues, interviews and dyadic systems.

443: Introduction to Audiology. 0-3-3. Study of the auditory mechanism, physics of sound, the process of hearing, disorders of hearing and their treatment. **(G)**

451: Communication Training and Development. (0-3-3). Critical analysis and practical application of the relationship between the study of communication and training and development.

455: Communication Theory. (0-3-3). An examination and synthesis of theoretical approaches to contemporary communication theory with special emphasis on interpersonal contexts.

460: Applied Forensics. 3-0-1 (9). Practical experience in debate and other forms of forensic speaking. May be repeated for a maximum of 9 hours credit.

465: Applied Practicum. 6-0-2. Practical experience in clinical activities related to service programs. May be repeated for a maximum of 6 hours credit. Registration by permission of instructor.

466: Group Processes. 0-3-3. Theory and practice of conducting group meetings, group discussions, to include parliamentary procedure.

470: Language and Speech Development. 0-3-3. Study of the normal acquisition and maintenance of speech and language; theoretical formulations about speech and language behavior, and approaches to its study. **(G)**

500: Introduction to Research. 0-3-3. A course designed to introduce students to research applicable to speech and theories of measurement including statistical and behavioral designs, reliability and judgments.

501: Seminar. 0-3-3. Individual problems and research in any of the following general areas of concentration: speech communication; speech-language pathology; audiology; theatre arts. Registration by permission of instructor.

504: Language Disorders in Children: Remediation. 0-3-3. Preq., SPCH 520 and permission of instructor. Etiologies, remediation techniques, principles, and programs for the language disorders found among children and adolescents.

507: Dysphagia. 0-3-3. A study of etiology symptomatology, and anatomic/behavioral characteristics of dysphagia with an emphasis on principles and methods of diagnosis and treatment.

508: Practicum in Communicative Disorders. 1-3 hour(s) credit (18). Supervised clinical experience with individuals who have disorders of communication.

509: Instrumentation and Calibration. 0-3-3. A study of the procedures, instruments, and standards used for calibration of audiometric equipment. Measurement of noise levels and OSHA guidelines will be reviewed.

510: Speech Science. 0-3-3. Study of normal speech and voice production with emphasis on the respiratory, articulatory, and phonatory mechanisms, and speech perception.

512: Audiological Correlates of Language Disorders in Adults. 0-3-3. Preq., Permission of Department Head. Language changes/disorders associated with normal aging and a neurogenic origin with management implications for the audiologist.

513: Articulation Disorders. 0-3-3. Preq., permission of instructor. Study of current research in testing, prediction, and management procedures for articulation disorders.

516: Hearing Disorders. 0-3-3. The effects of pathologies of the auditory system on basic and advanced audiometric tests are studied.

517: Hearing Science. 0-3-3. A study of basic acoustics, psychoacoustics and physiological acoustics.

519: Professional Issues in Speech-Language Pathology and Audiology. 0-1-1 (6). Preq., Permission of Department Head. Issues and professional responsibilities related to the professional practice of speech-language pathology and audiology. Three semester hours required of all graduate students in SLP/A in the first year of study; may be taken for three additional semester hours with permission of Department Head.

520: Language Disorders in Children: Assessment. 0-3-3. Preq., permission of instructor. A study of standardized and non-standardized techniques used to assess language disordered children and adolescents.

521: Anatomy and Physiology of the Hearing Mechanism. 0-3-3. Structure and function of bodily organs related to the processes of hearing.

523: Adult Language Disorders. 0-3-3. Preq., permission of instructor. A study of acquired language disorders associated with brain damage in adults with an emphasis on symptomatology, assessment, and diagnosis.

524: Voice Disorders. 0-3-3. Preq., permission of instructor. A study of the etiology, symptomatology and treatment procedures for voice disorders, including those that result from laryngeal pathologies.

525: Cleft Palate. 0-3-3. A study of the articulatory, resonance, and phonatory problems associated with cleft palate and facial maxillary disturbances including medical and speech therapy, habilitative and rehabilitative procedures.

526: Disorders of Fluency. 0-3-3. Preq., permission of instructor. A critical review of the literature to synthesize information regarding the definitions of fluency disorders, theories of etiologies, symptomatology, and treatment.

527: Advanced Diagnostic Procedures. 0-3-3. A study of formal and informal assessment procedures applicable to speech/language disorders. Emphasis on the role of differential diagnosis, specialized test procedures, and referral procedures.

528: Motor Speech Disorders. 0-3-3. Preq., permission of instructor. A study of motor speech disorders that result from damage to the central and peripheral nervous systems, their etiologies, symptomatology, diagnoses, and management.

529: Management of Adult Language Disorders. 0-3-3. Preq., SPCH 523 and permission of instructor. Clinical management of acquired adult language disorders.

530: Special Problems in Communicative Disorders. 0-3-3. Registration by permission of instructor. Individual research assignments in speech pathology and audiology.

533: Differential Audiology. 0-3-3. Discussion, demonstration and interpretation of behavioral tests used to differentiate hearing disorders.

534: Qualitative Research Methods. 0-3-3. The use of observational and interviewing research techniques for studying human communication.

535: Hearing Aids. 0-3-3. Involves discussion of hearing aids, selection procedure, and the amplification needs of the individual.

537: Seminar in Interpersonal Communication. 0-3-3. Interpersonal communication theory and research including topics concerning acquaintance, attitudes, language, nonverbal codes, and dyadic and small group communication patterns.

539: Seminar in Organizational Communication. 0-3-3. Topics include theories of organizational communication, consultation, research and field experience in organizations, communication in organizational settings and communication styles in decision making.

540: Industrial Audiology. 0-3-3. Directed toward the study of management and control of hearing problems in industry, and conservation of hearing in occupations and activities involving excessive noise exposure.

541: Physiological Tests of Auditory Function. 0-3-3. Auditory evoked potentials and electro-nystagmography examined in relation to purpose, scientific basis, procedures, and interpretation.

542: Seminar in Central Auditory Processing Disorders. 0-3-3. A study of central auditory processing disorders including examination of various auditory tests for central processing, including strengths and weaknesses of the tests.

543: Seminar in Pediatric Audiology. 0-3-3. A study of the investigation, identification, and assessment of children with audiological problems.

544: Communication in Small Groups. 0-3-3. Study of theory and research in the dynamics of small group communication processes with emphasis on the interaction of message variables with other variables.

545: Clinical Audiological Experience. 1 - 3 hour(s) credit (18). Supervised practicum in audiology including testing, aural habilitation/rehabilitation, report writing, and counseling clients with auditory problems.

546: Conference Course in Speech Communication. 0-3-3. Readings in the literature of speech communication designed to expand opportunities for individual consultation in research and in informational aspects of the students' work.

547: Internship. Advanced practicum in organizational communication in public, private and volunteer organizations.

548: Psychoacoustics. 0-3-3. A study of the experimental areas of audiology that are directed toward developing a theory of auditory functioning. May be repeated one time for credit.

555: Externship in Communicative Disorders. 8 semester hours. 40 contact hours per week. Preq., permission of the instructor. Supervised clinical practicum in an affiliated off campus clinical facility.

556: Seminar in Aural Rehabilitation. 0-3-3. Review of topical areas in aural rehabilitation for the infant through geriatric population.

558: Seminar in Amplification. 0-3-3. A study of recent advances in technology, rehabilitation strategies, and measurement as applied to amplification for the hearing impaired.

559: Special Topics. 1-4 hours credit. Selected topics in an identified area of study in speech and hearing science, audiology, or speech-language pathology.

STATISTICS (STAT)

200: Basic Statistics. 0-3-3. Preq., Mathematics ACT score is greater than or equal to 26, or Mathematics ACT score is greater than or equal to 590, or Placement by Exam, or MATH 101. Sample statistics, frequencies, normal and binomial distributions, point and interval estimation, significance testing, linear regression.

400: Introduction to Probability and Statistics. 0-3-3. Preq., MATH 242. Probability, random variables, discrete and continuous distributions, mathematical expectations, estimation, hypothesis testing, regression, analysis of variance. **(G)**

402: Introduction to Statistical Analysis. 0-3-3. Preq., MATH 101, junior standing and consent of the instructor; non-COES majors only. Understanding and applying: descriptive statistics, p-values, estimation, significance, regression, correlation. Use of packaged computer programs. **(G)**

405: Statistical Methods. 0-3-3. Preq., MATH 242, or consent of instructor. Data description, discrete and continuous random variables, inferences about means and variances of populations, categorical data, regression, correlation, analysis of variance, computers in data analysis. **(G)**

506: Regression Analysis. 0-3-3. Preq., STAT 405 or equivalent. Simple and multiple regression, inferences in regression, model formulation and diagnostics, analysis of covariance, nonlinear models, estimation and inference. Use of computers in data analysis.

507: Analysis of Variance. 0-3-3. Preq., STAT 405 or equivalent. Analysis of variance for standard and unbalanced experimental designs, multiple comparisons, fixed, random, and mixed effects models. Use of computers for data analysis.

508: Biometrics. 0-3-3. Preq., a course in statistics, or consent of instructor. Binomial, and normal distributions, hypothesis testing, regression, correlation, analysis of variance.

510: Advanced Statistics For Quality Improvements. 0-3-3. Preq., STAT 506, 507, or consent of instructor. Least squares, fractional factorials, Taguchi's parameter design, performance criteria, second-order designs, fitting second-order models, exploration of response surfaces, optimization.

511: Design of Experiments. 0-3-3. Preq., STAT 506 or 507 or 508, or equivalent. Factorial and fractional factorial experiments, incomplete block designs, repeated measures, split-plot, response surface, cross-over designs, use of computers for data analysis.

520: Applied Probability and Mathematical Statistics. 0-3-3. Preq., MATH 245, and a 400-level or above STAT course, or consent of instructor. Probability, random variables, discrete and continuous distributions, joint and conditional distributions, distribution of functions of random variables, expectations, moment generating functions.

525: Multivariate Statistics. 0-3-3. Preq., STAT 506 and 507, and MATH 308, or consent of instructor. Tests of hypotheses on means, multivariate analysis of variance, canonical correlation, principle components, factor analysis, computer applications.

530: Nonlinear Models. 0-3-3. Preq., STAT 506, 507, and MATH 244, or consent of instructor. Parameter estimation, tests of hypotheses, confidence intervals and regions, measures of curvature, use of computer algorithms.

548: Theory of Probability. 0-3-3. Preq., any 500-level STAT course, and MATH 244, or consent of instructor. Combinatorial analysis, conditional probability, distribution theory, random variables, random vectors, limit theorems, random walks.

550: Practicum in Statistical Consulting. 0-1-1 (3). Preq., STAT 506, 507, 511, or equivalent. Working with clients on statistical problems arising in research, such as modeling, design, data analysis and interpretation.

556: Time Series Analysis. 0-3-3. Preq., MATH 245, and STAT 520, or consent of instructor. Spectral analysis, least square filtering, parameter estimation, stationary random processes, ARIMA models, trend and seasonality.

606: Linear Statistical Models. 0-3-3. Preq., MATH 244 and 308, and STAT 506, 507, or consent of instructor. Generalized inverses, quadratic forms, Gauss-Markov theory, estimability, full rank models, non-full rank models, covariance analysis.

620: Theory of Probability. 0-3-3. Preq., any 500-level STAT Course, and MATH 244, or consent of instructor. Combinatorial analysis, conditional probability, distribution theory, random variables, random vectors, limit theorems, random walks.

621: Theory of Statistics. 0-3-3. Preq., STAT 520 or 620 or consent of instructor. Point estimation, interval estimation, statistical hypotheses, statistical tests, nonparametric inference, normal distribution theory.

625: Multivariate Statistics. 0-3-3. Preq., STAT 506 or 507, MATH 308, or consent of instructor. Tests of hypotheses on means, multivariate analysis of variance, canonical correlation, principle components, factor analysis, computer applications.

630: Nonlinear Models. 0-3-3. Preq., STAT 506 or 507, and MATH 244; or consent of instructor. Parameter estimation, tests of hypotheses, confidence intervals and regions, measures of curvature, use of computer algorithms.

650: Time Series Analysis. 0-3-3. Preq., MATH 244, and STAT 506, or consent of instructor. Spectral analysis, least square filtering, parameter estimation, stationary random processes, ARIMA models, trend and seasonability.

651: Discrete Markov Processes. 0-3-3. Preq., MATH 244 and 308, and STAT 520, or consent of instructor. Probability generating functions, Markov chains, renewal processes, Poisson processes, branching processes.

652: Stochastic Processes. 0-3-3. Preq., STAT 520, and MATH 245, or consent of instructor. Birth-death processes, random walks, diffusion processes.

680: Topics in Statistics. 0-3-3 (9). May be repeated for 3 hours credit each time.

STUDY SKILLS (STSK)

099: Developmental Orientation and Study Skills. 0-2-2. Identification and application of practical study techniques and attitudes associated with college success; identification of goals, time management and scheduling. (Pass/Fail)

UNIVERSITY SEMINAR (UNIV)

100: Orientation and Study Skills. 1-2 hour(s) credit. Orients new students to the University and facilitates the identification and application of practical study techniques and attitudes associated with college success; identification of goals, time management and scheduling.

101: Academic Skills Enhancement. 1-3-3. Required if Reading ACT score is less than or equal to 17. Orients new students to the University environment and builds reading and study skills fundamentals, which are essential for success in higher education.

Councils, Committees, Commissions

The President and the appropriate Vice President are 'ex-officio' members of all councils and committees.

ADMINISTRATIVE AND PLANNING COUNCIL. Purpose: Serves as the comprehensive review, assessment, and planning Council for Louisiana Tech University. The Council is chaired by the President, and the membership includes administrators representing all areas of the University. Members: Daniel Reneau (Chair), Jo Ann Dauzat, Jerry Drewett, Pamela Ford, Les Guice, Jean Hall, Wiley Hilburn, Edward Jacobs, Gene Johnson, Jim King, Terry McConathy, Jim Oakes, Ken Rea, Shirley Reagan, Joe Thomas, Chair of the University Senate, and Student Government Association President.

ADMINISTRATIVE REVIEW BOARD. Purpose: Hears only appeals from recommendations of the Behavioral Standards Committee, and is vested with appellate jurisdiction only. Members: Vice President for Student Affairs (Chair), Vice President for Academic Affairs, and Dean of the College in which the student is registered.

AMERICANS WITH DISABILITIES ACT (ADA) COUNCIL. Purpose: Established to review issues relative to compliance with the Rehabilitation Act of 1973 and the Americans with Disabilities Act, to forward recommendations to the appropriate administrative level, and to serve as a grievance review board for appeals. Members: Margaret Alexander (Chair), Jan Albritton, Don Dyson, Bill Fowler, John Garner, Linda Griffin, Ann Havard, Cheryl Myers, Sam Speed, and Sam Wallace.

ASTRONOMY ADVISORY COMMITTEE. Purpose: Oversees astronomical observing activities and serves in an advisory role to the planetarium at Louisiana Tech University. The Committee arranges star parties and observation of interesting astronomical events such as eclipses and comets, and is available to serve as a source of information. Also aids in improving the equipment at the planetarium. Members: Norman Witriol (Chair), William Deese, Tom Emory, and Natalia Zotov.

ATHLETICS COUNCIL. Purpose: Reviews intercollegiate athletic programs and activities and makes recommendations to the President for his consideration. Athletics Council members are appointed by the President. Members: James Liberatos (Chair), Robert Berguson, Mertrude Douglas, Sean Dwyer, Jim Dyer, Marvin Green, Wiley Hilburn, Terry McConathy, Ken Rea, Sam Speed, Mary Belle Tuten, Milton Williams, Student Representative, and Athletic Director (non-voting).

BEHAVIORAL STANDARDS COMMITTEE. Purpose: Serves as the disciplinary agent of the University in cases referred to it by the Vice President for Student Affairs or his representative. The Committee has appellate jurisdiction by a student from an adverse decision of the Vice President for Student Affairs which directly affects the complainant in his individual capacity. Members: The Committee members shall be selected from a roster composed from the following: twelve faculty members appointed by the Vice-President for Academic Affairs; twelve staff members appointed by the Vice President for Student Affairs, six SGA upperclassmen and six underclassmen appointed by the President of the University, and four chairpersons appointed by the Vice President for Student and Alumni Affairs. Four rotating committees, composed of faculty, staff, students and a chairperson, meet to hear discipline cases involving students.

CAMPUS COMPUTING SERVICES COORDINATING COMMITTEE. Purpose: Assess the campus needs for computing services and assign priorities to those needs. Members: Mel Corley (Chair), Tom Emory, Peter Gallagher, Chris Henderson, Kathleen Johnston, Jim King, Pam Milstead, Lori Myers, Mike Page, Bala Ramachandran, Gerald Reeves, Rebecca Stenzel, Roy Waters, Sam Wallace, and Dena Westerfield.

COMMENCEMENT COMMITTEE. Purpose: Reviews activities associated with the graduation ceremony and make appropriate recommendations to the President. Members: Bob Vento (Chair), Eddie Blick, William Deese, Les Guice, Pat Moncrief, Marilyn Robinson, Jim Robken, Tommy Sisemore, and Jimmy Washington.

COUNCIL OF ACADEMIC DEANS. Purpose: Coordinates academic programs and policies for the University. The Council considers actions taken by the Instructional Policies Committee and the Graduate Council. Recommendations of the Council of Academic Deans are forwarded to the President for consideration and final approval. Members: Vice President for Academic Affairs (Chair), Deans of each academic college, Dean of the Graduate School, and the Dean of Enrollment Management.

CURRICULA EFFECTIVENESS COUNCIL. Purpose: Established as a strategic initiative to formulate a plan to evaluate curricula to ensure effectiveness in the development of identified skills. Members: Jo Ann Dauzat (Chair), Gary Hauser, Donald Kaczvinsky, Tom Means, Cheryl Myers, Lori Myers, Randall Parker, Linda Ramsey, Steve Rovnyak, and Tom Springer.

ELECTRONIC LEARNING COMMITTEE. Purpose: Direction and oversight for the University's utilization of electronic delivery opportunities for instruction. Members: David Cargill (Chair), Nancy Alexander, Pamela Ford, Lawrence Leonard, James Liberatos, Dennis Minor, James Nelson, Bob Vento, and Elizabeth Wibker.

ENROLLMENT MANAGEMENT COUNCIL Purpose: Monitors, evaluates, and makes recommendations on matters related to recruiting and retention of students. Members: Pamela Ford (Chair), Jan Albritton, Dee Dee Anderson, Jim Dyer, Dan Erickson, James Liberatos, Dennis Minor, Robert Moran, James Nelson, Meredith Steger (student), Lori Theis, Bob Vento, Roger Vick, Roy Waters, Dena Westerfield, and Elizabeth Wibker.

EQUIPMENT DONATIONS COMMITTEE. Purpose: Reviews all proposed equipment donations to any part of the University (including the Foundation). Members: Debbie Forney, Les Guice, Ed Jacobs, and Jim King.

FACULTY AND STAFF HANDBOOK COMMITTEE. Purpose: Charged with the timely review of and suggested revisions prior to the annual printing of the Faculty and Staff Handbook. Recommendations are forwarded for review and approval to appropriate administrators and councils. Committee membership consists of a faculty member from each academic college and administrative representatives from the Offices of Academic Affairs and Personnel. Members: Bill Campbell (Chair), Margaret Alexander, Bill Deese, Don Dyson, Kathryn Matthew, Janet Pope, Joe Pullis, and Carole Tabor.

FEE COMMITTEE. Purpose: Serves to review proposals regarding University fees and to make recommendations regarding fees to the President and the University of Louisiana System, as appropriate. Members: Vice President for Academic Affairs; Vice President for Student Affairs; Vice President for University Advancement, Vice Chairperson, University Senate; Vice President for Administrative Services/Business Manager; and SGA President.

FINANCIAL PLANNING TASK FORCE. Purpose: Advisory group to the President and to the Administrative and Planning Council on budget matters and budget priority funding. Members: President Reneau, Vice President Ken Rea, Vice President Jerry Drewett, Vice President Joe Thomas, Vice President Jim King, Vice President Jean Hall, Dean Shirley Reagan, Dean Terry McConathy, President of SGA, President of University Senate, and Mr. Kyle Edmiston.

GENETIC-BIOHAZARDS-RADIOACTIVE REVIEW COMMITTEE. Purpose: Ensures that all hazards associated with teaching and research are identified, monitored, and controlled. Members: Don Braswell, Ed Griswold, Don Haynie, Terry McConathy, David Mills, Dale Snow, and Ron Thompson.

GENERAL EDUCATION REQUIREMENTS COMMITTEE. Purpose: Assess the effectiveness of the General Education Requirements as mandated by the Board of Regents and to forward recommendations relative to Tech's General Education Requirements as appropriate. Members: Dennis Minor (Chair), Kimberly Kimbell-Lopez, Stan Napper, Ray Newbold, Ed Pinkston, and Elizabeth Wibker.

GRADUATE COUNCIL. Purpose: Reviews and recommends proposals for graduate courses and curricula, and may initiate or consider recommendations concerning instructional policies of the Graduate School. Members: Terry McConathy (Chair), John Brewer, William Campbell, Marc Chopin, Gail Clark, Dianne Douglas, Hisham Hegab, Alice Hunt, Tom Means, Dennis Minor, Ramu Ramachandran, Peggy Schenk, Cathy Stockton, Bob Vento (non-voting), and SGA Representative.

GRIEVANCE COMMITTEE. Purpose: Provides for an independent body to consider the grievances of faculty and other unclassified personnel. This committee is composed of nine selected/elected members and a chairperson appointed by the President. The Executive Committee of the University Senate shall select six members (one from each college) to serve on the University Grievance Committee. Each division (including Student Affairs, University Advancement, Academic Affairs and Administrative Affairs) shall elect one member each to serve on the University Grievance Committee. Only non-classified staff personnel may be elected to represent the divisions. Members: Joe Pullis (Chair), Dickie Crawford, Mike DiCarlo, Kenneth Griswold, Glynn Ingram, James G. Johnston, William Jordan, Mary Margaret Livingston, E. J. Miller, and Sam Wallace.

HEALTH SCIENCE ADVISORY COMMITTEE. Purpose: Addresses collective issues relating to health care education and serves in an advisory capacity to the Vice President for Academic Affairs. Members: Associate Dean of Applied & Natural Sciences (Chair), Representatives of the Departments of Agricultural Sciences, Biological Sciences, Biomedical Engineering, Chemistry, Health and Physical Education, Health Information Management; Directors of programs in Nursing, Nutrition and Dietetics, and Speech-Language Pathology and Audiology.

HONORS PROGRAM COUNCIL. Purpose: Develops and governs the Honors Program in conjunction with the Director of the Honors Program. Members: Donald Kaczvinsky (Chair), Jan Albritton, William Deese, Edward Jacobs, Tom Means, Tom Springer, and Stephen Webre.

HUMAN USE COMMITTEE. Purpose: Ensures that the University follows the regulations for the protection of human research subjects as set forth by the Department of Health and Human Services. All research projects involving human subjects, both sponsored and non-sponsored projects, must be reviewed and approved by the Institutional Review Board for Use of Human Research Subjects before the research project is initiated as well as periodically during the conduct of the research project. Members: James Green (Chair), Bonnie Gerald, Tommy Grafton, Paul Hale, Deby Hamm, Ned Head, Mary Livingston, Terry McConathy, David Mills, Thomas Phillips, Florence Potter, and Deborah White.

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE. Purpose: Oversees the welfare of any animals used in experimental research, their care and facilities, as directed by the U. S. Department of Agriculture and the National Institutes of Health. Members: James Spaulding (Chair), William Green, Steven Jones, Terry McConathy, Dennis Minor, Tom Springer, and Jerome Thelen.

INSTRUCTIONAL INNOVATION COMMITTEE. Purpose: Established in 1995 with the responsibility to enhance communications among faculty about campus instructional technology capabilities and about experimentation with instructional techniques and to schedule development programs to meet identified needs of the faculty. Members: Stephen Webre (Chair), David Cargill, Bill Deese, David Hall, Pam Milstead, Dennis Minor, Linda Ramsey, Rebecca Stenzel, and Jeffrey Walczyk.

INSTRUCTIONAL POLICIES COMMITTEE. Purpose: Considers problems of college life in the areas of courses, curricula, and instruction in undergraduate studies. Also, serves as an instrument of control to avoid course duplication and proliferation.

Members: Chairperson elected each September. Two representatives from each academic college, one representative from the library and Barksdale, a student representative from the SGA, and the Registrar as an ex-officio member.

INSURANCE AND RELATED BENEFITS COMMITTEE. Purpose: Periodically reviews and makes recommendations to the President regarding new benefit programs and changes to existing plans in order to keep the University's fringe benefit program competitive. This Committee is designated as the plan administrator for the University's Cafeteria (Section 125) Plan. Members: Don Dyson (Chair), Dwight Anderson, Jerry Drewett, Jean Hall, Ken Rea, and Joe Thomas.

INTELLECTUAL PROPERTY COMMITTEE. Purpose: Oversight of intellectual property, policies, and procedures for the University. Members: Tom Noble (Chair), Terry McConathy (ex officio), Jean Hall (ex officio), William Campbell, Marc Chopin, Paul Hale, Lawrence Leonard, and Dennis Minor.

MUSEUM COMMITTEE. Purpose: Establishes policies and guidelines for the operation of the Museum. Aids the Director and Associate Director in obtaining artifacts for the Museum. Members: Wade Meade (Chair), Jonathan Donehoo, Sallie Rose Hollis, Joan Marie Edinger, Linda Reneau, and Gary Zumwalt.

OVERSIGHT COMMITTEE. Purpose: Identifies prospective grant opportunities, provides assistance in the development of joint proposals, provides final approval on all matters affecting jointly developed projects and to report to college administrators progress on all on-going joint projects between two or more colleges. Members: Dawn Basinger (Chair), Nancy Alexander, Jenna Carpenter, Jo Ann Dauzat, William Deese, Janie Humphries, and Linda Ramsey.

PARKING AND TRAFFIC COMMITTEE. Purpose: Responsible for the establishment and annual review of the parking and traffic regulations as set forth in the University "Vehicle Regulations Manual." This committee is also charged with reviewing appeals, proposals, and recommendations submitted by members of the University community pertaining to parking and traffic concerns. Members: Vice President for Student Affairs or his designee (Chair), Chief of University Police, representative from the Physical Plant, one representative from each of the five academic colleges, two members of the Student Government Association appointed by the SGA President, and one student Housing Representative and a University Senate representative.

PK-16+ COORDINATING COUNCIL. Purpose: To support the redesign of teacher education programs. University faculty, public school personnel, and community leaders work together on a number of initiatives designed to impact the recruitment, preparation, and retention of teachers for Louisiana. Members: Dawn Basinger (Coordinator), William Britt, David Darland, Jo Ann Dauzat, William Deese, Pamela Ford, Lawrence Gibbs, Steven Graves, Les Guice, David Gullatt, Ruth Ellen Hanna, Janie Humphries, Edward Jacobs, Gary Jones, Don Kaczvinsky, Kimberly Kimbell-Lopez, Pauline Leonard, Randy Moore, Richard Noles, Mary Null, Wayne Parker, Pam Prince, Linda Ramsey, Kenneth Rea, Shirley Reagan, Daniel D. Reneau, Rebecca Smith, Cathy Stockton, Jeff Walczyk, and David Wright.

PREMEDICAL/PREDENTAL ADVISORY COMMITTEE. Purpose: Advises Premedical and Predental students, conducts personal interviews of applicants to medical and dental school and prepares recommendations for these applicants. Members: Larry Sellers (Chair), Ed Griswold, John McKillup, David Mills, Stanley Napper, Paul Ramsey, De'ane Sheehan, Dale Snow, and James Spaulding.

RESEARCH COUNCIL. Purpose: Coordinates the research activities of the University, strengthens interdisciplinary and inter-institutional research, serves as a vehicle for discussion of problems involving the administration of research projects and grants, recommends to the University administration policies concerning research and other sponsored programs, and fosters, stimulates, and advances the research effort of the University. Members: Terry McConathy (Chair), Susan Black, William Campbell, Marc Chopin, Mike DiCarlo, Stephanie Hermann (non-voting), Dennis Minor, Tom Noble, Theresa Parker (non-voting member), Ramu Ramachandran, Bonita Smith, Cathy Stockton, and SGA representative.

SPACE UTILIZATION COMMITTEE. Purpose: Ensures that all campus space is usable by all members of the campus community who can justify its use in total consideration of the nature of the space. Members: Vice President for Academic Affairs, Vice President for Administrative Affairs/Business Manager, and Vice President for Student Affairs.

STUDENT ORGANIZATIONS COMMITTEE. Purpose: Serves as the governing committee for all matters involving student organizations. Members: Director of Student Development (Chair), Faculty/Staff member appointed by the Vice President for Student Affairs, Faculty Senate Representative, Interfraternity Council President, Panhellenic President, Student Government Association President, University Staff Member appointed by the Vice President for Student Affairs, Chief of University Police, IFC Advisor, Panhellenic Advisor, Director of Multicultural Affairs, and Union Board President.

STRATEGIC PLANNING COMMITTEE. Members: Terry McConathy (Chair), DeeDee Anderson, Jo Ann Dauzat, Carrel Dowies, Jr., William Fellows, Pamela Ford, Leslie Guice, Andy Halbrook, Edward Jacobs, Gene Johnson, William Jordan, Shirley Reagan, SGA President, University Senate President, and Bob Vento,

STUDENT SELF-ASSESSED FEES OVERSIGHT COMMITTEE. Purpose: Monitors and evaluates the need for student self-assessed fees. Members: One student representing the SGA, one student representing the Union Board, one student representing KLPI, one student representing Multicultural Affairs, one graduate student representing Housing Operations, two faculty members appointed by the President, one staff person representing the Vice President for Financial Services/Comptroller, two staff persons representing the Vice President for Student Affairs, two ex-officio members, and Chief Business Affairs officer and Chief Student Affairs officer.

STUDENT TECHNOLOGY FEE BOARD. Purpose: Serves as the final recommending body for expenditures from the Student Technology Fee. Members: President Daniel D. Reneau (Chair), SGA President, SGA Vice-President, SGA Member-at-Large, Senior Class President, Junior Class President, Sophomore Class President, Freshman Class President, Mel Corley, Jim King (ex-officio), Kathy Matthew, Terry McConathy, Joe Thomas, and Roy Waters.

UNIVERSITY ASSESSMENT COMMITTEE. Purpose: To review unit reports and develop a summary report and feedback for the Administrative Planning Council. Members: Terry McConathy (Chair), DeeDee Anderson, Marc Chopin, Bill Fellows, Pamela Ford, James Liberatos, Dennis Minor, James Nelson, Cathy Stockton, Lori Theis, Sam Wallace, and Student Representative.

UNIVERSITY CATALOG COMMITTEE. Purpose: Charged with the responsibility to review the catalog to insure accuracy of approved policies and procedures prior to printing. Members: Bob Vento (Chair), Dee Dee Anderson, Pamela Ford, Wanda Ginn, James Liberatos, Jim Nelson, Lori Theis, Bob Toburen, Sam Wallace, and Elizabeth Wibker.

UNIVERSITY COMPUTING POLICY AND PLANNING COUNCIL. Purpose: Makes final decisions concerning the allocation of computer related resources for the University. Members: Dan Reneau (Chair), Jerry Drewett, Jim King, Terry McConathy, Ken Rea, and Joe Thomas.

UNIVERSITY HEALTH COUNCIL. Purpose: Coordinates efforts of University personnel in affecting student and staff decision making in the areas of health concerns. Specifically, the Council implements strategies for integration of health services information; assesses and recommends, where appropriate educational programming; and attempts to identify information generated by faculty and staff on health issues. Members: A representative is appointed from each of the academic colleges, the department/schools of Health and Physical Education, Nursing, Athletics, Health Center, Food Services, Residential Life, and Personnel and Student Services. Two student representatives also serve on the Council.

UNIVERSITY LIBRARY ADVISORY COMMITTEE. Purpose: Studies library needs in view of the academic program and advises the Director of Libraries on matters of general library policy, the development of library resources, and upon means which may integrate the library program with other academic activities of the University. The Committee serves as a liaison group between the faculty and the Library. Members: Ali Darrat, Sean Dwyer, Bonnie Gerald, Richard Greechie, Don Haynie, Robert Jungman, Dennis Minor, Paul Ramsey, Jonathan Schwarz, Rebecca Stenzel, Donna Vavrek, Amy Vessel, and one undergraduate and one graduate student.

UNIVERSITY SAFETY COMMITTEE. Purpose: Reviews and recommends the adoption of University safety standards. The Committee works through safety representatives to inform departments of new procedures and to assist in the implementation of safety regulations. Members: Environmental Safety Officer (Chair), Director of Nuclear Center, Director of Physical Plant, Director of Personnel, Department Head of Department of Chemistry, Department Head of Department of Biological Sciences, Director of University Housing, Chief of University Police, and Head of Division of Nursing.

UNIVERSITY SENATE. Purpose: Promotes the general welfare of the University; discusses and expresses views on matters of general concern to the faculty; effectively communicates between the faculty and the administration; initiates policy proposals; makes recommendations on policy proposals submitted to it by the administrative officials of the University; and requests, through appropriate channels, from the administrative officials of the University, information which might influence policies and recommendations of the Senate. Members: The membership includes elected representatives from the Faculty who are employed full time and professional personnel engaged in Specialized Academic Services. Members shall serve for a term of three years.

UNIVERSITY SEXUAL HARASSMENT COMMITTEE. Purpose: Hears and considers testimony and other relevant evidence to make findings of fact, to determine whether the University's policy on sexual harassment has been violated, and if so to recommend appropriate relief and disciplinary action(s). Members: James M. King (Chair), Connie Acklin, John Adams, Dwight Anderson, John Garner, Carrie Kelly, Stan Napper, and Carole Tabor.

UNIVERSITY TENURED FACULTY COMMITTEE. Purpose: Provides due process according to the Handbook in cases involving action taken by the University which could result in the discharge, termination of contract, or demotion in rank of a tenured faculty member. Members: Peter Jones (Chair), Phillip Cook, Susan Corley, Linda Sivils, Jerome Tobacyk, University Senate President, and University Senate Vice President.

UNIVERSITY TOUR COMMITTEE. Purpose: Ensures that any tour recommended by the University falls within the mission of the University, that is, teaching, research and public service. Members: Ed Jacobs (Chair), Jerry Drewett, Ronnie Wiggins, and Student Government Association President.

Board of Regents Support Fund Endowed Faculty

Louisiana Board Of Regents Support Fund Endowed Chairs

The goal of the Endowed Chairs Program is to assist colleges and universities primarily in attracting but also in retaining eminent scholars who will contribute significantly to the enhancement of the overall infrastructure of higher education in Louisiana. This Program is highly leveraged by its requirement of a three-to-one private-sector match: at least $600,000 in private-sector funds is a prerequisite to receiving Support Fund matching funds of $400,000, maximum. Louisiana Tech has received donor gifts and matching funds from the Board of Regents Support Fund to establish nine $1 million endowed chairs. Faculty appointed as endowed chairs must have a national/international reputation in the discipline, a record of prominent leadership roles in the profession, outstanding publication record, a record of external research or recognition for innovation in teaching and development of grants and awards; and/or an acclaimed performance and creative portfolio, as appropriate to the chair.

Board of Regents Support Fund Eminent Scholar Chairs and Current Faculty Recipients Listed in Order of Establishment

T. L. James Eminent Scholar Chair - Civil Engineering - Dr. Freddy Roberts
Pipes Eminent Scholar Chair - Mechanical Engineering
Harold J. Smolinski Eminent Scholar Chair – Accounting – Dr. Ted D. Englebrecht
Elva J. Mann Eminent Scholar Chair - Human Ecology - Dr. Alice Hunt
F. J. Taylor Eminent Scholar Chair - Journalism - Dr. Reginald Owens
Eminent Scholar Chair in Construction - Dr. Raymond Sterling
Max P. & Robbie L. Watson Eminent Scholar Chair - Biomedical Engineering - Dr. Charles Robinson
George E. Pankey Chair - English
McCallister Chair in Computer Information Systems & Analysis

Louisiana Board Of Regents Support Fund Endowed Professorships

Endowed Professorships are established for the purpose of providing an annual funding source to enhance program and faculty development. Holders of the professorships should be of such quality and professional stature as to provide excellence in program leadership and bring national and international recognition to the University. Louisiana Tech has received donor gifts and matching funds from the Board of Regents Support Fund to establish 89 endowed professorships.

Board of Regents Support Fund Endowed Professorships and Current Faculty Recipients Listed in Order of Establishment

W. W. Chew Endowed Professorship in the College of Engineering & Science - Dr. Ronald Thompson
Maurice B. Tatum Endowed Professorship in the College of Administration & Business - Dr. Mark Kroll
Sue Woodard Huckaby Endowed Professorship in Human Ecology - Dr. Brian Camp
William Y. Thompson Endowed Professorship in History - Dr. Abraham Attrep
Agriculture Endowed Professorship in the Department of Agricultural Sciences - Dr. Jeffrey Hillard
Frank W. Merritt Endowed Professorship in Forestry - Dr. James Dickson
College of Education Endowed Professorship - Dr. Fran Holman
Mabel and Doug McGuire Endowed Professorship in English - Dr. Robert Jungman
George K. Anding Endowed Professor in English - Dr. Dennis Minor
Century Telephone Endowed Professorship in the College of Engineering & Science - Dr. Melvin Corley
Merle L. & Virginia M. Borchelt Endowed Professorship in Human Ecology - Dr. Janet Pope
Mildred Trussell McGehee Endowed Professorship in Early Childhood Education - Dr. Janie Humphries
Ruston Building & Loan Endowed Professorship in the College of Administration & Business - Dr. Ray Anthony Inman
Ruston State Bank Endowed Professorship in the College of Administration & Business - Dr. Joe M. Pullis
Franciscan Sisters of St. Francis Medical Center Endowed Professorship in Nursing - Patricia Bourgeois
Edward L. Moyers Endowed Professorship in the College of Administration & Business - Dr. Timothy Barnett
Thomas Jackson "Jack" Magee, Jr. & Mary Jo Cuningham Magee Ross Endowed Professorship - Dr. Rebecca Stenzel
James F. Naylor, Jr. Endowed Professorship in the College of Engineering & Science
Premier Bank Endowed Professorship in the College of Administration & Business - Dr. Ali Darrat
Clarece Harp Lyles Endowed Professorship in Ceramic Arts - Mary Louise Carter
Bank One Professorship in the College of Administration and Business
Entergy #1 Endowed Professorship in Electrical Engineering - Dr. Kody Varahramyan
Entergy #2 Endowed Professorship in Electrical Engineering
Entergy #3 Endowed Professorship in Electrical Engineering - Dr. Li-He Zou
Marvin T. Green Endowed Professorship in Premedicine - Dr. Paul Ramsey
SWEPCO Endowed Professorship in Engineering - Dr. Richard Greechie
Maxfield Endowed Professorship in Mathematics & Statistics - Dr. Raja Nassar
State Farm Endowed Professorship in the College of Administration & Business - Dr. Hani Mesak
Century Telephone Enterprises, Inc./Clark M. Williams Memorial Endowed Professorship in the College of Administration & Business – Dr. Otis Gilley

Scott Weathersby Endowed Professorship in Zoology/Premedicine - Dr. Howard Hunt
Entergy 44 Endowed Professorship in Electrical Engineering - Dr. Louis Roemer
Mildred Saunders Adams Endowed Professorship in English - Dr. Donald Kaczvinsky
Upchurch Endowed Professorship in the College of Engineering & Science - Dr. Bill Elmore
Robert Howson Endowed Professorship in Civil Engineering
John J. Cordaro/Entergy #5 Endowed Professorship in Electrical Engineering
Robbie Auger Watson Endowed Professorship in Human Ecology #1 - Dr. Duane Dowd
Elva Leggett Smith Endowed Professorship in Education - Dr. Walter Buboltz
Charles Emmett Leggett Professorship in Agriculture - Dr. Mark Murphey
James Alvey Smith Endowed Professorship in Music & Performing Arts - Dr. Jon Barker
Linnie McGee Leggett Endowed Professorship in Agriculture - Dr. Peter Gallagher
Lincoln General-Glenwood Endowed Professorship in Nursing - Pamela Moore
Max P. Watson, Jr. Endowed Professorships in the College of Administration & Business
Max Watson, Sr. Endowed Professorship in Mechanical Engineering - Dr. William Jordan
Robbie Auger Watson Endowed Professorship in Human Ecology #2 - Dr. Bonnie Hackes
Robbie Auger Watson Endowed Professorship in Human Ecology #3 - Dr. Barbara Garner
James Emmett Smith Endowed Professorship in Mechanical Engineering - Dr. Jun-Ing Ker
Charles & Nelwyn Spruell Endowed Professorship in Engineering - Dr. Gary Zumwalt
John J. Cordaro/Entergy LP&L/NOPSI Professorship #6 - Dr. Kody Varahramyan
McDermott International Endowed Professorship in the College of Engineering & Science - Dr. James Nelson
South Central Bell Endowed Professorship in Electrical Engineering
Balsley-Whitmore Endowed Professorship in the College of Administration & Business #1
JPJ Investments Endowed Professorship in Financial Planning - Dr. Dwight Anderson
Robert C. Snyder English Endowed Professorship - Dr. Allison Smith
Lallage Wall Endowed Professorship in Performing Arts - Cherrie Sciro
Hyman J. Sachs English Professorship - Dr. Patrick Garrett
Wayne & Juanita Spinks Professorship in Engineering #1 - Dr. Steve Jones
Wayne & Juanita Spinks Professorship in Engineering #2 - Dr. Lee Sawyer
Balsley-Whitmore Endowed Professorship in the College of Administration & Business #2
Bank One Endowed Professorship in Education
Cunningham Interior Design Professorship
Edmondson/Crump Endowed Professorship in Engineering - Dr. George Butler
Frank Earl Hogan Endowed Professorship in Engineering
Dr. Walter Koss Professorship in Math - Dr. Ruth Ellen Hanna
Charlotte Lewis Professorship in English
Dr. Harvye Lewis Professorship in Human Ecology
KPMG Endowed Professorship in Business - Dr. Thomas Phillips
Joe D. Waggonner Professorship in Political Science - Dr. Jason Pigg
Wayne A. & Juanita Spinks Endowed Professorship #3 in the College of Engineering & Science
Joe D. Waggonner Professorship in the College of Engineering & Science - Dr. L. Dale Snow
Charlyne Smith Wyche Professorship in English
John D. Winters Endowed Professorship in History

University Faculty Emeriti

F. Jay Taylor, President Emeritus
Louisiana Tech University

Virgil Orr, Vice-President Emeritus
Academic Affairs

E. S. Foster, Vice-President Emeritus
Student Affairs

George W. Byrnside, Vice-President Emeritus
Administrative Affairs

Jerry W. Andrews, Dean Emeritus
College of Education

Hal B. Barker, Dean Emeritus
College of Life Sciences

Elenora A. Cawthon, Dean Emerita
Student Affairs

B. J. Collinsworth, Dean Emeritus
College of Education

Jeanne M. Gilley, Dean Emerita
College of Human Ecology

John E. Maxfield, Dean Emeritus
Graduate School

Agnes C. Miller, Dean Emerita
College of Human Ecology

Bob R. Owens, Dean Emeritus
College of Administration and Business

Paul J. Pennington, Dean Emeritus
College of Arts and Sciences

Jack Thigpen, Dean Emeritus
College of Engineering

Nancy M. Tolman, Associate Dean & Professor Emerita
College of Applied and Natural Sciences

Phoebe Allen, Professor Emerita
College of Liberal Arts

Billy J. Attebery, Professor Emeritus
College of Arts and Sciences

Randall Franklin Barron, Professor Emeritus
College of Engineering

Robert Mack Caruthers, Professor Emeritus
College of Engineering

Marion Earl Council, Professor Emeritus
College of Engineering and Science

David H. Cowling, Professor Emeritus
College of Engineering and Science

Billy J. Davis, Professor Emeritus
College of Life Sciences

Lou H. Davison, Professor Emerita
College of Applied and Natural Sciences

Richard L. Gibbs, Professor Emeritus
College of Engineering and Science

B. H. Gilley, Professor Emeritus
College of Arts and Sciences

Leo A. Herrmann, Professor Emeritus
College of Engineering

Milton R. Johnson, Jr., Professor Emeritus
College of Engineering

James D. Lowther, Professor Emeritus
College of Engineering and Science

James Malone, Professor Emeritus
College of Engineering

Margaret W. Maxfield, Professor Emerita
College of Arts and Sciences

Robert W. McLeane, Professor Emeritus
College of Engineering

James Robert Michael, Professor Emeritus
College of Administration and Business

Patterson B. Moseley, Professor Emeritus
College of Arts and Sciences

Jack T. Painter, Professor Emeritus
College of Engineering

Virginia R. Pennington, Professor Emerita
College of Applied and Natural Sciences

Bobby E. Price, Professor Emeritus
College of Engineering and Science

John K. Price, Professor Emeritus
College of Liberal Arts

Edmund N. Roots, Jr., Professor Emeritus
College of Engineering and Science

Robert C. Snyder, Professor Emeritus
College of Arts and Sciences

Joseph W. Strother, Professor Emeritus
College of Liberal Arts

Billy Jack Talton, Professor Emeritus
College of Education

Carolyn F. Talton. Professor Emerita
College of Education

William Y. Thompson, Professor Emeritus
College of Arts and Sciences

Joe R. Wilson, Professor Emeritus
College of Engineering

UNIVERSITY FACULTY

Ackerman, Sandra G.; Clinical Professor, Medical Technology – BS, Univ. of Arkansas School of Medicine; MEd, Univ. of Arkansas-Little Rock (2000)
Adams, John Clyde; Professor, School of Forestry - BSF, MS, PhD, Louisiana State Univ. (1976) Graduate Faculty
Aditya, Ram; Assistant Professor, Dept. of Psychology & Behavioral Sciences - MA, PhD, Temple Univ.; MBA, Univ. of Madras, India; BSC, Univ. of Madras, India. (1997) Graduate Faculty
Al-Agha, Khaled; Instructor, Mathematics and Statistics – BS, Assiout Univ., MS, PhD, Kansas State Univ. (2000)
Alexander, A. Edwin.; Assistant Professor, Computer Science - BS, MS, Univ. of Southern Mississippi; PhD, Univ. of Southwestern Louisiana. (1997) Graduate Faculty
Alexander, Joe L.; Assistant Professor of Music – BA, East Carolina Univ.; MM, James Madison Univ.; DMA, Univ. of North Texas (2001)
Alford, Bruce L.; Associate Professor, Dept. of Management and Marketing – BS, Univ. of West Florida, PhD, Louisiana State Univ. (2001) Graduate Faculty
Amyx, Douglas Alan; Assistant Professor, Management and Marketing – BA, The Univ. of Oklahoma; MBA, Univ. of Texas-Arlington; PhD, Oklahoma State Univ. (2000) Graduate Faculty
Anderson, Dale; Associate Professor, Mechanical Engineering - BS, ME, PhD, Brigham Young Univ. (1984) Graduate Faculty
Anderson, Dwight C.; Professor, Finance and Head, Department of Economics and Finance - BS, MBA, LA Tech Univ.; PhD, Univ. of Alabama. (1979) Graduate Faculty
Anderson, William S; Captain, USAF, Assistant Professor, Air Force Aerospace Studies - BS, Troy State Univ. (1999)
Annino, David A.; Assistant Professor, Computer Information Systems and Analysis - MBA, Univ. of Georgia (2002)
Attrep, Abraham M.; Professor, History - BA, LA College; MA, Tulane Univ.; PhD, Univ. of Georgia. (1962) Graduate Faculty
Banks, Arlene O.; Instructor, A. E. Phillips - BA, MS, Louisiana Tech Univ.. (1997)
Barker, Jon Albert; Professor, Music - BA Northeast Louisiana State College; MCM, SW Baptist Theological Seminary; DMA, LSU. (1969) Graduate Faculty
Barker, Jon Mark; Assistant Professor, Mechanical Engineering - BS, Louisiana Tech Univ.; MS, PhD, Clemson Univ. (1998) Graduate Faculty
Barnett, Timothy R.; Associate Professor, Management - BS, MBA, Univ. of North Alabama; DBA, Mississippi State Univ. (1991) Graduate Faculty
Basinger, Dawn; Coordinator/Assistant Professor, PK-16+, Curriculum, Instruction, and Leadership – BS, Northwestern State Univ.; MEd and EdD, Louisiana Tech Univ. (2000)
Baxter, Helen D.; Assistant Professor, Health Information Management - BS, MA, Louisiana Tech Univ. (1979)
Beck, Jason L., Captain, Assistant Professor of Aerospace – BS, MS Southwest Texas State Univ. (2000)
Beene, Mary; Clinical Associate Professor, Medical Technology - BS, MHS, Louisiana State Univ. (1998)
Besser, Ronald S.; Associate Professor, Chemical Engineering/IfM - Bs, Univ. of California, Berkley; MS, PhD, Stanford Univ. (1999) Graduate Faculty
Beu, Danielle Suzette; Assistant Professor, Management – BA, Baylor Univ.; MBA, Texas Christian Univ.; PhD, Univ. of Oklahoma. (2000) Graduate Faculty
Bell, Terry S.; Clinical Professor, Medical Technology - AD, Shawnee State Univ.; BS, Wright State Univ.; MD, Ohio State Univ. (1995)
Berguson, Robert Jenkins; Professor, Art - BA, MA, MFA, Univ. of Iowa; AA, Corning Community College.(1970) Graduate Faculty
Bhuian, Shahid N.; Associate Professor, Management and Marketing – BA, Dhaka Univ.; MSBA, Univ. of Illinois; PhD, Texas Tech Univ. (2000) Graduate Faculty
Bisping, Timothy R.; Assistant Professor, Economics - BBA, MA, Wichita State Univ.; PhD Oklahoma State Univ.; (2000) Graduate Faculty
Black, Pamela W.; Associate Professor, Nursing - BSN, Univ. of Mississippi Medical Center; MSN, Northwestern State Univ. (1992)
Blackman, Debra L.; Professional in Residence, Computer Information Systems - BS, MBA, Louisiana Tech Univ. (1997)
Blanchard, Richard J., Jr.; Clinical Professor, Medical Technology - BA, Louisiana Tech Univ.; MD, Louisiana State Univ. (1993)
Blick, Thomas Edward, Jr.; Associate Professor, Journalism - BA, Univ. of Richmond; MA, Penn State Univ.; PhD, Univ. of Tennessee (1990)
Boatman, Richard J.; Clinical Professor, Medical Technology - BS, DMV, Oklahoma State Univ.; MD, Univ. of Oklahoma (1999)
Bourgeois, Patricia McLin; Professor, Nursing - BS, McNeese State Univ.; MSN, Northwestern State Univ. (1975)
Bowling, C. G.; Clinical Professor, Biological Sciences - BA, MD, West Virginia Univ. (1996)
Brewer, John Clinton; Professor and Director, Barksdale Center -BA, Centenary College; MA, PhD, Univ. of Texas (1970) Graduate Faculty
Bridges, Latonia V.; Assistant Professor, Speech – BS, Univ. of Southern Colorado (2001) Graduate Faculty
Briski, Karen; Adjunct Associate Professor, Biomedical Engineering – BS, Albright College; PhD, Univ. of Michigan (2001)
Brotherston, Geoanne G.; Professor, Architecture,- BFA, Auburn Univ.; MFA, Texas Tech Univ. (1988) Graduate Faculty
Brotherston, Joseph H.; Associate Professor, Professional Aviation - BS, Michigan State Univ.; MBA, Auburn Univ. (1992)
Buboltz, Walter C., Jr.; Assistant Professor, Psychology and Behavioral Sciences - BS, Union College; MA, Marist College; PhD, Kent State Univ. (1996) Graduate Faculty
Buckley, Lynell S.; Associate Professor, Prescott Library - Head, Reference Department - BA, MA, Louisiana Tech Univ.; MLS, Univ. of Mississippi (1971)
Bukowski, Marie; Assistant Professor of Art; BFA, Carnegie Mellon Univ.; MFA, Univ. of Pennsylvania (2000) Graduate Faculty
Bush, John M.; Associate Professor, History - BSE, Arkansas State Teachers College; MA, PhD, Mississippi State Univ. (1965) Graduate Faculty
Butler, George M.; Professor and Program Chair, Mathematics and Statistics - BS, MS, PhD, Oklahoma State Univ. (1967) Graduate Faculty
Caldwell, Damon; Assistant Professor, Architecture – B. ARCH, Louisiana Tech Univ.; M. ARCH, Univ. of the Arts (2001)
Calhoun, John Davidson; Assistant Professor, Prescott Memorial Library, Head, Collection Management Department, - BA, MA, Northeast Louisiana Univ.; MSLS, Florida State Univ. (1980)
Callens, Earl Eugene, Jr.; Professor of Mechanical Engineering, Academic Director of Mathematics and Statistics - BS, MS, Georgia Institute of Technology; PhD, Univ. of Tennessee Space Institute (1983) Graduate Faculty
Camp, Brian D.; Associate Professor, Family Studies - BS, Oklahoma State Univ.; MS, Kansas State Univ.; PhD, Texas Tech Univ. (1993) Graduate Faculty
Campbell, William J., Jr.; Associate Dean of Graduate Studies and Research, College of Applied and Natural Sciences and Professor, Biological Sciences - BA, Univ. of South Florida; MS, PhD, Univ. of Florida (1992) Graduate Faculty
Cargill, David R., Assistant Professor, Prescott Library, Director, Center for Instructional Technology and Distance Learning – BA and MS, Louisiana Tech Univ.; MLIS, Louisiana State Univ. (1994)
Carpenter, Jenna Price; Academic Director, Electrical Engineering, Computer Science, Electrical Engineering Technology; Associate Professor, Mathematics and Statistics - BS, Louisiana Tech Univ.; MS, PhD, Louisiana State Univ. (1989) Graduate Faculty
Carter, Mary Louise; Assistant Professor, Art – BFA, Kansas City Art Institute; MFA, New York State College of Ceramics (1997) Graduate Faculty
Carter, Peggy; Assistant Professor, Prescott Library – BA, Louisiana Tech Univ.; MA, Louisiana State Univ. (1999)
Carwile, Guy; Assistant Professor, Architecture - B.Arch., LSU; M. ARCH, Rice Univ. (1994) Graduate Faculty
Chapin, Billie Ann; Associate Professor, Nursing - BS, American Univ.; MS, Texas Women's Univ. (1990)
Chestnut, Laura A.; Instructor, Family and Child Studies and Director, Early Childhood Education Center – BS, MS, Louisiana Tech Univ. (2000)
Choi, Chee Hung Ben: Assistant Professor, Computer Science - BS, MS, PhD, Ohio State Univ. (1999) Graduate Faculty

Chopin, Marc C.; Associate Professor, Economics and Associate Dean for Graduate Studies and Research, College of Administration and Business - BA, Univ. of Texas; PhD, Texas A&M (1992)
Christensen, JoAnn; Assistant Professor, Barksdale Program - BS, Univ. of Oklahoma; BS, Centenary College; MBA, DBA, Louisiana Tech Univ.; CPA (1988)
Christie-David, Rohan; Associate Professor, Finance; ACIB, London Chartered Inst. of Bankers; MBA, Wake Forest Univ.; PhD, Univ. of South Carolina. (2001) Graduate Faculty
Cicciarella, Charles F.; Assistant Professor, Human Movement - EdD, Boston Univ. (1982) Graduate Faculty
Clark, Gail; Associate Professor, Physical Education - BSE, Henderson State Univ.; MS, Indiana Univ.; EdD, Univ. of Utah (1978) Graduate Faculty
Clarke, Colin A., Assistant Professor, English – BA, Amherst College; MA, PhD, George Washington Univ. (2001) Graduate Faculty
Cochran, James J.; Assistant Professor, Computer Information Systems and Analysis - BS and MBA, Wright State Univ., DBA, Univ. of Cincinnati (2000) Graduate Faculty
Cochran, Patricia T.; Assistant Professor, Barksdale - BA, MA, Louisiana Tech Univ. (1998)
Colgan, Wesley III; Assistant Professor, Biological Sciences - BS, Sonoma State Univ.; PhD, Oregon State Univ. (1999) Graduate Faculty
Conrad, Steven A.; Adjunct Assistant Professor, Biomedical Engineering - BS, Univ. of Southwestern Louisiana; MS, Case Western Reserve Univ.; MS, Louisiana Tech Univ.; MD, Louisiana State Univ.; PhD, Case Western Reserve Univ. (1987) Graduate Faculty
Coppola, David M.; Adjunct Associate Professor, Biomedical Engineering – BA, Univ. of Virginia; MS, East Tennessee State Univ.; PhD, North Carolina State Univ.; Post Doc, Worchester Foundation for Experimental Biology (2001)
Cook, Philip Charles; Garnie W. McGinty Professor, History - BA, Louisiana State Univ.; MA, Louisiana Polytechnic Institute; PhD, Univ. of Georgia (1969) Graduate Faculty
Corley, Melvin Roy; Professor, Mechanical Engineering - BS, Louisiana Tech Univ.; MS, PhD, Univ. of Texas (1980) Graduate Faculty
Corley, Susan C.; Assistant Professor, Office Administration - BS, MBA, Louisiana Tech Univ. (1974)
Countryman, William M.; Professor, Mathematics and Statistics - BS, MA, PhD, Univ. of Texas-Arlington (1982) Graduate Faculty
Cowger, Ernest L., Jr.; Associate Professor, Barksdale Center - BA, Texas Tech Univ.; MEd, Frostburg State College; PhD, Univ. of Georgia (1975) Graduate Faculty
Cox, Carey Francis; Assistant Professor, Mechanical Engineering – BS, MS, Louisiana Tech Univ.; PhD, Mississippi State Univ. (2000) Graduate Faculty
Cox, Mickey; Professor, Electrical Engineering- BS, MS, Louisiana Tech Univ.; PhD, LSU (1985) Graduate Faculty
Craighead, Debra V.; Assistant Professor, Nursing - BSN, MSN, Northwestern State Univ. (1993)
Cronk, Stanley R.; Assistant Professor, Biomedical Engineering – BS, PhD, Louisiana Tech Univ. (2001)
Crump, Kenny S.; Adjunct Professor, Chemical Engineering - BS, Louisiana Tech Univ.; MA, Univ. of Denver; PhD, Montana State Univ. (1968)
Cuccia, Kevin D.; Assistant Professor, Prescott Memorial Library, Reference Librarian - BA, Univ. New Orleans; MLS, Louisiana State Univ. (1987)
Cui, Tianhong; Research Assistant Professor, IfM - BS, Nanjing Univ. of A&A; PhD, Chinese Academy of Sciences (1999) Graduate Faculty
Cureington, Erin; Assistant Professor, Animal Science – BS, Louisiana Tech Univ.; MS, Texas A&M Univ. (2000)
Dablow, Dean C.; Director, School of Art; Professor, Art - BS, Univ. of Wisconsin, Stevens Point; MA, MFA, Univ. of Iowa (1976) Graduate Faculty
Dai, Weizhong, Associate Professor, Mathematics and Statistics - MS, Xiamen Univ., China; PhD, Univ. of Iowa (1994) Graduate Faculty
Dans, J. Clarice; Professor and Head, Speech - BA, Louisiana Tech Univ.; MA, Univ. of Alabama; PhD, Memphis State Univ. (1984) Graduate Faculty
Darland, Nancy; Professor, Nursing - BSN, MSN, Northwestern State Univ. (1984)
Darrat, Ali F.; Professor, Economics - BA, Univ. Benghazi; MA, PhD, Indiana Univ. (1987) Graduate Faculty
Dauzat, Jo Ann; Dean, College of Education, Professor, Curriculum, Instruction, and Leadership, BA, MA, Northwestern State College; EdS, Univ. of Mississippi; EdD, Northeast Louisiana Univ. (1991) Graduate Faculty
Dauzat, Samuel Varner; Professor, Curriculum, Instruction, and Leadership - BA, MA, Northwestern State College; EdD, Univ. of Mississippi (1968) Graduate Faculty
Davis, Kerry C., Instructor, English – BA, MA, Louisiana Tech Univ. (2001)
Deckard, Donald L.; Assistant Professor, Forestry - BS, MS, PhD, Southern Illinois Univ. (1997) Graduate Faculty
Dennis, Marcia Sandra; Assistant Professor, Nursing – BSN, Univ. of Alabama; MSN, Univ. of Texas-Arlington (2001)
Deese, William Cullen; Professor, Chemistry - BS, Univ. of Central Arkansas; PhD, Univ. of Arkansas (1981)
DeRouen, Sidney M.; Adjunct Professor, Agricultural Sciences - BS, MS, PhD, Louisiana State Univ. (1992) Graduate Faculty
DiCarlo, Michael; Assistant Professor, Associate Director of Libraries, Prescott Memorial Library - BA, Tulane Univ.; MLS, LSU (1983)
Dickson, James G.; Professor, Forestry - BS, Univ. of the South; MS, Univ. of Georgia; PhD, Louisiana State Univ. (1999) Graduate Faculty
Donehoo, Jonathan; Professor, Art - BFA, Univ. of Georgia; MFA, Louisiana Tech Univ. (1985) Graduate Faculty
Dorsett, Charles I.; Professor, Mathematics and Statistics - BS, MS, Stephen F. Austin; PhD, North Texas State (1982)
Dotson, Anita L.; Assistant Professor, Prescott Library, Technical Services Librarian - AA, Cleveland State Community College; BFA, Middle Tennessee State Univ.; MS, Univ. of Tennessee (1997)
Douglas, Dianne; Professor, Foreign Languages - BA, Monmouth College; MA, PhD, Univ. of Oklahoma (1979) Graduate Faculty
Douglas, Gerald W.; Associate Professor, Professional Aviation - BS, MA, Louisiana Tech Univ. (1983)
Dowd, Duane A.; Assistant Professor, Family Studies – BS, Brigham Young Univ.; MS, PhD, Texas Tech Univ. (2000)
Dugas, Steve; Assistant Professor, Professional Aviation - BS, Louisiana Tech Univ.; MA, Grambling State Univ. (1987)
Dulaney, Ronald; Assistant Professor, Architecture – BA, Furman; MArch, Virginia Polytechnic Institute & State Univ. (1999)
Dwyer, Thomas Sean; Assistant Professor, Marketing - BA, Univ. of Virginia; MBA, New York Univ.; PhD, Univ. of Alabama (1996) Graduate Faculty
Dyer, James M.; Professor, School of Forestry - BS, MS, Oklahoma State Univ.; PhD, Louisiana State Univ. (1977)
Eddy, Danny H.; Instructor, Chemistry - BS, Southern Arkansas Univ.; Master of Divinity, Baptist Missionary Association Theological Seminary; MS, Louisiana Tech Univ. (1993)
Ellender, Kay G., Instructor of English, BA, Louisiana State Univ.-Baton Rouge; MA, Louisiana Tech Univ. (2000)
Ellis, T. Selwyn; Assistant Professor, Computer Information Systems – BS, MBA, Mississippi College; DBA, Louisiana Tech Univ. (1999) Graduate Faculty
Elmore, Bill Baucum; Academic Director, Chemical Engineering, Civil Engineering, Geology, Construction Engineering Technology; Upchurch Associate Professor, Chemical Engineering – BS, MS, PhD, Univ. of Arkansas. (1990) Graduate Faculty
Emerson, Richard W.; Instructor, Social Sciences – BA, Harding College; MSW, Louisiana State Univ. (2001)
Endicott, Candice M., Instructor, English – BA, Centenary College; MA, Univ. of Louisiana-Lafayette (2000)
Englebrecht, Ted D.; Harold J. Smolinski Eminent Scholar Chair of Accounting and Professor, School of Professional Accountancy – BSBA, MBA, East Carolina Univ.; MAcc, PhD, Univ. of South Carolina. (2001) Graduate Faculty
Erickson, Dawn; Instructor, Food and Nutrition/Dietetics - BS, Southwest Missouri State; MPH, Univ. of Minnesota (1992)
Fageir, Siddig; Assistant Professor, Social Sciences – BS, Univ. of Iowa; MA, Univ. of Toledo
Fakelmann, Robert Joseph; Associate Professor, Architecture - BED, MARCH, Texas A&M (1980) Graduate Faculty
Farrell, Beverly A.; Clinical Associate Professor, Medical Technology - BS, Spring Hill College; MS, Louisiana Tech Univ. (1987)
Ferguson, Magdalen B.; Assistant Professor, Foreign Languages - BA, Univ. of Southern Florida; MA, Louisiana State Univ. (1971)
Fife, Gladys Elizabeth; Assistant Professor, Nursing – BSN, MSN, Northwestern State Univ. (2001)

Forest, Tony; Assistant Professor, Physics – BS, Univ. of Southern Colorado; MS, Western Michigan Univ.; PhD, Univ. of Illinois at Urbana-Champaign (2000) Graduate Faculty
Franks, Kenneth D.; Clinical Instructor, Medical Technology - BS, Northeast State Univ.; MS, Louisiana Tech Univ. (1999)
Fuller, Donna G.; Associate Professor, Nursing - BSN, MSN, Northwestern State Univ. (1993)
Fuller, Jan C.; Assistant Professor, Health Information Management - BS, MBA, Louisiana Tech Univ. (1991)
Fuller, J. Bryan, Jr.; Assistant Professor, Management and Marketing - BS, Univ. of Houston; MBA, Stephen F. Austin State Univ.; PhD, The Univ. of Alabama (2000) Graduate Faculty
Gale, Bruce K.; Adjunct Assistant Professor, Biomedical Engineering/IfM – BS, Brigham Young Univ.; PhD, Univ. of Utah (1999) Graduate Faculty
Gallagher, Marty; Adjunct Instructor, Biomedical Engineering – MS, LOTR (Occupational Therapist)
Gallagher, Peter W.; Professor, Agricultural Sciences - BS, MS, Univ. of. Wisconsin; PhD, Ohio State Univ. (1978) Graduate Faculty
Garner, Barbara P.; Associate Professor, Family and Child Studies - BS, Kent State Univ.; MS, PhD, Univ. of North Carolina (1990) Graduate Faculty
Garner, Donna J.; Instructor, Speech - BA, Louisiana Tech Univ.; MCD, Louisiana State Univ. Medical Center Graduate Faculty
Garrett, Patrick P.; H. J. Sachs Endowed Professorship and Professor, English - BA, Louisiana Tech Univ.; MA, Auburn Univ.; EdD, North Texas State (1982) Graduate Faculty
Gaston, Pat; Instructor, Mathematics and Statistics - BS, MS, Louisiana Tech Univ. (1995)
Garza, Ray T.; Colonel, USAF, Professor of Aerospace Studies – BAC, St. Mary's Univ.; MAS, Webster Univ. (2002)
Gibbs, H. Lawrence, III; Assistant Professor, Music - BA, Northeast Louisiana Univ.; MA, Louisiana Tech Univ. (1989)
Gibson, Gordon, P. (Trey), III; Instructor, Speech – BA, Louisiana State Univ. at Shreveport; MA, Arkansas State Univ. (2000)
Gibson, Mark D.; Associate Professor and Interim Director, Forestry - BS, MS, Clemson Univ.; PhD, Oregon State Univ. (1982) Graduate Faculty
Gilbert, Scott; Instructor, Speech/Theatre - BA, Oregon State Univ., MA, Louisiana Tech Univ. (1994)
Gilley, Otis W.; Professor, Economics - BS, Univ. of Texas-Arlington; MS, PhD, Purdue Univ. (1988) Graduate Faculty
Goldspiel, Alan; Associate Professor, Music - BM, DMA, Univ. of Hartford; MM, Yale Univ. (1995) Graduate Faculty
Goshorn, Edward L.; Associate Professor, Speech – BS, Univ. of Southern Mississippi; MS, Univ. of North Carolina; PhD, Memphis State Univ. (1999) Graduate Faculty
Grafton, Tommy D.; Associate Professor, Health & Physical Education - BS, Northwestern State Univ.; MS, Northeast State Univ.; EdD, Univ. of Southern Mississippi (1977) Graduate Faculty
Graves, Marta Creekmore; Assistant Professor/Spatial Data Laboratory Supervisor, Forestry – BA, Univ. of California; MS, Univ. of Illoinois (2000)
Graves, Steven M.; Assistant Professor, Social Sciences - BA, Ohio State Univ.; BS, Ohio Univ.; MA, Miami Univ.; PhD, Univ. of Illinois (1998)
Greechie, Richard J.; Professor, Mathematics & Statistics - BA, Boston College; PhD, Univ. of Florida (1990) Graduate Faculty
Green, James D.; Associate Professor, Biomedical Engineering - BS, Louisiana Polytechnic Institute; MD, Tulane Univ. (1974) Graduate Faculty
Green, William H.; Professor and Resident Veterinarian, Agricultural Sciences - BS, Louisiana Tech Univ.; MS, DVM, Auburn Univ. (1992)
Greenwood, Zeno D.; Assistant Professor, Physics – BS, Univ. of Carolina, MS, PhD, Univ. of South Carolina (1999) Graduate Faculty
Greer, C. Russ; Adjunct Professor, Biomedical Engineering - BS, Louisiana Tech Univ.; MD, Louisiana State Univ. (1987)
Grice, Anthony; Associate Professor, Health and Physical Education – BS, Med, Memphis State Univ.; EdD, Northwestern State Univ. of Louisiana (2001)
Griffin, Dixie Morris; Professor, Civil Engineering - BS, MS, PhD, Virginia Polytechnic Institute, P.E. (1984) Graduate Faculty
Griswold, Kenneth E.; Professor, Biological Sciences - BS, MS, Louisiana Polytechnic Institute; PhD, Univ. of South Carolina (1983)
Gu, Huaijin; Associate Professor, Mathematics and Statistics - BS, MS, Beijing Univ.; PhD, Northeastern Univ. (1991) Graduate Faculty
Guice, Leslie K.; Dean, Engineering and Science and Jack Thigpen Professor, Civil Engineering - BA, MS, Louisiana Tech Univ.; PhD, Texas A&M Univ., P.E. (1977) Graduate Faculty
Guinn, Mark D.; Assistant Professor, Theatre - BA, Centre College of Kentucky; MFA, Memphis State Univ. (1991) Graduate Faculty
Gullatt, David E.; Associate Professor and Head, Curriculum, Instruction, & Leadership - BS, MS, EdS, Louisiana Tech Univ.; PhD, Univ. of Kansas (1998) Graduate Faculty
Hackes, Bonnie L.; Assistant Professor, Nutrition and Dietetics - BS, MS, Univ. of Nebraska; PhD, Kansas State Univ. (1998) Graduate Faculty
Hair, James G.; Clinical Professor, Medical Technology - BS, MD, Louisiana State Univ. (1984)
Hakim, Mohsin; Adjunct Assistant Professor, Biomedical Engineering - MD, Assiut Univ. School of Medicine (1992)
Hale, Paul Nolen, Jr.; Professor, Biomedical Engineering, Director of Technology Transfer Center and Associate Dean for External Programs - BS, Lamar Tech; MS, Univ. of Arkansas; PhD, Texas A&M Univ. (1966) Graduate Faculty
Hall, David Edward; Associate Professor, Mechanical Engineering - BS, Louisiana Tech Univ.; MS, PhD, Georgia Institute of Technology (1995) Graduate Faculty
Halliburton, C. Lloyd; Professor, Foreign Languages - BA, Centenary; MA, PhD, Louisiana State Univ. (1981) Graduate Faculty
Hamilton, Phillip C.; Assistant Professor, Agribusiness, Agricultural Sciences – BS, MS, Oklahoma State Univ.; PhD, Iowa State Univ. (2001)
Hamilton, William F. Jr.; Assistant Professor, Prescott Library, Head, Bibliographic Management Department -BA, MSLS, Louisiana State Univ. (1980)
Hanna, Ruth Ellen; Professor, Mathematics and Statistics - BS, MS, PhD, Louisiana Polytechnic Institute (1967)
Harrington, Charles P.; Professor, Architecture - B ARCH, Univ. of Arkansas; M ARCH, Oklahoma State Univ. (1980)
Hardie, Julia A.; Instructor, English – BA, Univ. of North Carolina; MA, Penn State (1990)
Hariston, R. Keith; Clinical Professor, Medical Technology - BS, Univ. of Arkansas; MD, Univ. of Arkansas for Medical Sciences (1999)
Harvard, Ann; Adjunct Instructor, Biomedical Engineering – LOTR, CDRS (Occupational Therapist)
Hauser, Gary; Professor, Art - BFA, Auburn Univ.; MFA, Univ. of Mississippi (1985) Graduate Faculty
Hayes, Timothy; Associate Professor, Architecture - BA, B ARCH, M ARCH, Louisiana Tech Univ. (1984)
Haynie, Donald T.; Associate Professor, Biomedical Engineering – BS, Univ. of South Florida; PhD, Johns Hopkins Univ. (2001) Graduate Faculty
Heard, John M.; Associate Professor, Music - BM, Eastman School of Music; MM, Univ. of Michigan; DMA, Univ. of Texas (1977)
Hegab, Hisham E.; Associate Professor, Mechanical Engineering - BS, Louisiana Tech Univ.; MS, PhD, Georgia Institute of Technology (1995) Graduate Faculty
Heiman, Brenda L.; Associate Professor, Speech – BS, Henderson State Univ.; MS, East Texas State Univ.; PhD, Univ. of New Mexico (2001) Graduate Faculty
Hemidal, James E.; Associate Professor and Head, Health and Physical Education – BS, Tulane Univ.; MeD, Univ. of New Orleans; PhD, Univ. of Southern Mississippi (2001) Graduate Faculty
Higgins, Andrew C.; Assistant Professor, English – BA, Springfield College; MA, PhD, Univ. of Massachusetts (2001) Graduate Faculty
Highfield, Michael J.; Assistant Professor, Finance – BBA, MBA, Mississippi State Univ.; MS, PhD, Univ. of Kentucky (2002) Graduate Faculty
Hilburn, Wiley W. Jr.; Professor and Head, Journalism - BA, Louisiana Polytechnic Institute; MS, Louisiana State Univ. (1968)
Hillard, Jeff B.; Associate Professor, Agronomy - BS, MS, Univ. of Idaho; PhD, Texas A&M (1990) Graduate Faculty
Hines, Krista; Instructor, Mathematics and Statistics - BS, MA, Louisiana Tech Univ. (1993)
Holder, Sue Humphrys; Professor, Music - BME, Florida State Univ.; MEd, Univ. of Florida; DMA, Univ. of Colorado (1967)
Hollis, Kimberly E.; Instructor/Equine Laboratory Supervisor, Agricultural Sciences - BS, MS, Louisiana Tech Univ. (1999)
Hollis, Sallie R.; Associate Professor, Journalism - BA, MA, Louisiana Tech Univ. (1974)
Hollister, Anne M.; Adjunct Assistant Professor, Biomedical Engineering - BS, Univ. of California-Davis; MS, Purdue Univ.; MD, Univ. of California-Davis (1982)

Holman, Frances E.; Professor, Curriculum, Instruction, and Leadership - BA, MA, Louisiana Tech Univ.; EDD, Northeast Louisiana Univ. (1971) Graduate Faculty
Holt, G. Joan; Adjunct Professor, Biological Sciences - BS, MA, Univ. of Texas; PhD, Texas A&M. (1988)
Honea, Kendal; Assistant Professor, Health and Physical Education – BS, MS, Arkansas State Univ.; PhD, Univ. of Mississippi (2001) Graduate Faculty
Hughes, Ralph M.; Assistant Professor, Barksdale - BS, Louisiana State Univ.; MS, Texas A&M Univ. (1991)
Humphries, Janie H.; Professor, Family and Child Studies - BS, Texas Women's Univ.; M.Ed., Sam Houston State Univ.; EdD, East Texas State Univ. (1987) Graduate Faculty
Hunt, Alice E.; Professor, Nutrition and Dietetics - BS, Humbolt State Univ.; MS, Fresno State Univ.; MS, Louisiana Tech Univ.; PhD, Colorado State Univ. (1990) Graduate Faculty
Hunt, Howard E.; Associate Professor, Biological Sciences - BS, MS, Humbolt State Univ.; PhD, Texas A&M (1989) Graduate Faculty
Hurtig, Dolliann M.; Assistant Professor, Foreign Languages -BA, Newcomb College; MA, Univ. of Southwestern Louisiana; PhD, Tulane Univ. (1986) Graduate Faculty
Huston, Charles Richard; Professor, Marketing - BA, Wabash College; MBA, DBA, Indiana Univ. (1979) Graduate Faculty
Hyde, Norlyn; Associate Professor, Nursing - BSN, Northeast Louisiana Univ.; MSN, Northwestern State Univ. (1994)
Ingram, Earl Glynn; Associate Professor, History - BA, Louisiana Polytechnic Institute; MA, Auburn Univ.; PhD, Univ. of Georgia (1966) Graduate Faculty
Inman, Ray Anthony; Professor, Management - BBA, Univ. of Mississippi; MBA, Univ. of North Alabama; DBA, Memphis State Univ. (1989) Graduate Faculty
Irvin, Judy C.; Assistant Professor, Prescott Library, Head, Serials Department - BS, Louisiana Tech; MLS, Louisiana State Univ. (1990)
Jackson, Gary B. S.; Clinical Instructor, Medical Technology - BS, Cameron Univ. (1999)
Jacobs, Edward Craney; Dean, Professor, English; College of Liberal Arts - BA, MA, PhD, Auburn Univ. (1972) Graduate Faculty
Jacobs, Karen L.; Instructor, English - BA, Augustana College; MA, PhD, Auburn Univ. (1989) Graduate Faculty
Jerro, Dwayne H.; Assistant Professor, Mechanical Engineering - BS, Southern Univ. and A&M College; PhD, Louisiana State Univ. & A& M College; (1999) Graduate Faculty
Jewell, Daphne C.; Instructor, Biological Sciences - BS, MS, EdS, Louisiana Tech Univ. (1995)
Jewell, Frederick Forbes; Professor, School of Forestry - BS, MS, Michigan State Univ.; PhD, West Virginia Univ.; (1966)
Ji, Haifeng; Assistant Professor, Chemistry – BS, Sichuan Univ.; PhD, Chinese Academy of Science (2000) Graduate Faculty
Jimmerson, Michelle G.; Instructor, English and Coordinator of General Studies Program – BA, MA, Louisiana Tech Univ. (1996)
Johnson, Gene H.; Dean of the College of Administration and Business – BA, Midwestern Univ.; MSA and PhD, Texas Tech Univ. (1990)
Johnson, Jerald E; Assistant Professor, A. E. Phillips - BS, NW Missouri State Univ.; MS, Washburn Univ.; EDD, McNeese State Univ. (1974)
Johnson, Ruth B.; Instructor, A. E. Phillips - BFA, Mississippi State Univ. for Women; MA, Louisiana Tech Univ. (1984)
Johnston, James G.; Professor, Accounting - School of Professional Accountancy - BBA, Univ. of Toledo; MS, Ohio State Univ.; PhD, Univ. of Missouri (1981) Graduate Faculty
Johnston, Kathleen; Virgil Orr Assistant Professor, Physics - BS, PhD, Univ. of Houston (1992) Graduate Faculty
Jones, Lewis A.; Instructor, Health Information Management - BS, Louisiana Tech Univ.; JD, Louisiana State Univ. (1991)
Jones, Peter R.; Professor, Art - BA, Amherst College; MFA, Univ. of Iowa (1980) Graduate Faculty
Jones, Steven A.; Assistant Professor, Biomedical Engineering - BA, MS, PhD, Univ. of California at San Diego (1997) Graduate Faculty
Jordan, David; Associate Professor, Health & Physical Education - BA, Baylor Univ.; MA, Sam Houston State Univ.; PhD, Texas A&M Univ. (1976) Graduate Faculty
Jordan, William Mark; Max P. Watson, Sr. Professor and Program Chair, Mechanical Engineering - BS, MS, Colorado School of Mines; PhD, Texas A&M (1985) Graduate Faculty
Jungman, Robert E.; Doug and Mabel McGuire Endowed Professorship and Professor, English - BA, Washington & Lee Univ.; MA, PhD, Florida State Univ. (1972) Graduate Faculty
Jurkus, Anthony F.; Professor, Management - BA, DePaul Univ.; MBA, PhD, Georgia State Univ. (1975) Graduate Faculty
Kaczvinsky, Donald P.; Associate Professor, English - BA, Providence College; MA, Univ. of Virginia; PhD, Pennsylvania State Univ. (1990) Graduate Faculty
Kennedy, Angela C.; Head and Associate Professor, Health Information Management - BS, Louisiana Tech Univ.; MS, Business Adinistration, Nova Southeastern Univ. (1999)
Kennedy, Gary A.; Associate Professor and Head, Agricultural Sciences – BS, MBA, Louisiana Tech Univ.; PhD, Louisiana State Univ. (1997) Graduate Faculty
Kennedy, Kevin; Assistant Professor, Art - BFA, Louisiana Tech Univ.; MFA, Univ. of Illinois (1994) Graduate Faculty
Ker, Jun-Ing; Associate Professor and Program Chair, Industrial Engineering - BS, Taiwan Tunghai Univ. MS, PhD, Univ. of Missouri-Columbia (1989) Graduate Faculty
Kim, Byungjoon; Assistant Professor, Industrial Engineering – BS, Han-Yang Univ.; MS, PhD, Univ. of Nebraska (2002) Graduate Faculty
Kimbell-Lopez, Kimberly; Assistant Professor, Curriculum, Instruction & Leadership - BS, MED, Northeast Louisiana Univ.; PhD, Univ. of Houston (1997) Graduate Faculty
King, Stacy; Instructor, Mathematics and Statistics – BS, Mansfield Univ.; MS, State Univ. of New York (2001)
Kroll, Mark Joseph; Professor and Head of Dept. of Management and Marketing – BS and MBA, Sam Houston State Univ.; DBA, Mississippi State Univ. (2000) Graduate Faculty
LaBorde, Connie C.; Associate Professor, Physical Education – BS, MS Louisiana Tech Univ.; PhD, Texas A&M Univ. (1999)
Lankford, Dallas S., IV; Professor, Mathematics and Statistics - BA, MA, PhD, Univ. of Texas (1978) Graduate Faculty
Lautigar, Delene; Assistant Professor, Family and Consumer Sciences – BS, MS, Louisiana Tech Univ. (2000)
Leangsuksun, Chokchai; Associate Professor, Computer Science – BS, Khon Kean Univ.-Thailand; MS, PhD, Kent State Univ. (2002)
Leonard, Lawrence J.; Associate Professor; Curriculum, Instruction and Leadership – BA, Memorial Univ. of Newfoundland; M.Ed., St. Francis Xavier Univ.; PhD, Univ. of Toronto (2000) Graduate Faculty
Leonard, Pauline E.; Assistant Professor, Curriculum, Instruction and Leadership – BA, Memorial Univ.; MEd, St. Francis Xavier Univ.; PhD, Univ. of Toronto (2000) Graduate Faculty
Lewis, Celia M.; - Assistant Professor, English – BA, Univ. of Texas-Austin; MA, Univ. of Paris-La Sorbonne; PhD, Bayor (2001)
Lewis, Jackson P.; Professor, Art - BFA, East Carolina Univ.; MFA, Univ. of Georgia (1976) Graduate Faculty
Lewis, Karen; Instructor, English - BA, MA, Univ. of Illinois (1988)
Lewis, Tom J.; Professor, Foreign Languages - BA, Univ. of Illinois; MA, PhD, Indiana Univ. (1975) Graduate Faculty
Liberatos, James D.; Associate Dean of Undergraduate Studies, Applied and Natural Sciences and Associate Professor, - BS, College of Charleston; MS, PhD, Florida State Univ. (1988) Graduate Faculty
Lindley, Lori; Assistant Professor, Psychology and Behavioral Sciences – BA, Univ. of Notre Dame; MS, PhD, Iowa State Univ. (2001) Graduate Faculty
Lippton, Howard L.; Adjunct Assistant Professor, Biomedical Engineering – BS, Tulane Univ.; MD, Tulane Univ. School of Medicine (1984)
Liu, Jia Ping; Assistant Professor, Physics/IfM - BS, MS, Central-So. Univ. of Tech.; PhD, Univ. of Amsterdam (1999) Graduate Faculty

Livingston, Mary Margaret; Professor, Psychology and Behavioral Sciences - BA, Univ. of Michigan; MA, PhD, Univ. of Alabama (1977) Graduate Faculty
Long, Sandra W.; Associate Professor, Barksdale Program - BS, MED, Louisiana State Univ.; MA, EdS, Louisiana Tech Univ.; PhD, Univ. of Alabama (1989) Graduate Faculty
Lowe, Joy L.; Associate Professor, Curriculum, Instruction, and Leadership - BA, Centenary College; BA, Louisiana Tech Univ.; MS, Louisiana State Univ.; PhD, North Texas State Univ. (1977) Graduate Faculty
Luehlfing, Michael S.; Associate Professor, School of Professional Accountancy - BS, Univ. of Southern Mississippi; MS, Louisiana State Univ.; PhD, Univ. of Georgia (1998) Graduate Faculty
Lurie, Aubrey A.; Clinical Professor, Medical Technology - BCH, MB, Univ. Witwatersrand; FF Path, Coll Med South Africa. (1989)
Lvov, Yuri M.; Associate Professor, Chemistry/IfM - MS, PhD, Moscow State Univ. (1999) Graduate Faculty
Maddox, Glenda; Assistant Professor, Barksdale - BA, MA, Louisiana Tech Univ.; MA, Northwestern State Univ. (1973)
Magee, Bruce R.; Assistant Professor, Foreign Languages and English - BA, Louisiana Tech Univ.; MDiv, ThD, New Orleans Baptist Theological Seminary; PhD, Louisiana State Univ. (1998) Graduate Faculty
Maggio, Beverly Mitchell; Instructor, Health and Physical Education - BS, MS, Southern Univ. (1983)
Maggio, Michael Todd; Assistant Professor, Art, BFA Louisiana Tech Univ.; MFA, Univ. of Washington (2001) Graduate Faculty
Malveaux, Dianne D.; Clinical Instructor, Medical Technology - BS, McNeese (1991)
Marciukaityte, Dalia; Assistant Professor, Finance – BS, MS, Kaunas Univ. Lithuania; PhD, Drexel Univ. (2001) Graduate Faculty
Marino, Andrew A.; Adjunct Associate Professor, Biomedical Engineering - BS, St. Joseph's Univ.; MS, PhD, Syracuse Univ. (1987)
Marion, James P.; Assistant Professor, Mathematics & Statistics - BA, MS, Mississippi State Univ. (1981)
Martin, Cathy D.; Assistant Professor, Social Science - BA, Peru State College; MA, PhD, Univ. of Nebraska (1997)
Martin, Michelle M.; Assistant Professor, Health Information Management - BS, MS, Louisiana Tech Univ. (1999)
Matthew, Kathryn I.; Assistant Professor, Curriculum, Instruction, and Leadership - BA, MEd, Univ. of New Orleans; EdD, Univ. of Houston (1995) Graduate Faculty
Mathews, Darren E., Instructor, English – BA, MA, Louisiana Tech Univ. (2001)
Mays, Gloria D.; Assistant Professor, Nursing - BSN, Grambling State Univ.; MSN, Southeastern Louisiana Univ. (1998)
McConathy, Terry M.; Dean, Graduate School and Univ. Research; Professor, English - BA, Univ. of Toronto; MA, Louisiana Tech Univ.; PhD, Louisiana State Univ. (1990) Graduate Faculty
McCormick, George M., III; Clinical Professor, Medical Technology - BS, Southwestern at Memphis; PhD, MD, Univ. of Tennessee (1984)
McCurdy, Maureen; Associate Professor, Geosciences - BS, MS, Univ. of Southwestern Louisiana; PhD, Univ. of Wisconsin (1990)
McFadden, Sue Jones; Assistant Professor, Prescott Library, Reference Librarian - BA, Louisiana Tech Univ.; MLS, Univ. of Mississippi (1967)
McKillip, John L.; Assistant Professor, Biological Sciences - BS, Ball State Univ.; PhD, Washington State Univ. (1999) Graduate Faculty
McShane, Michael J.; Assistant Professor, Biomedical Engineering - BS, PhD, Texas A&M Univ. (1999) Graduate Faculty
McVea, Winston Neville Jr.; Assistant Professor, Business Law - BS, Louisiana Polytechnic Institute; JD, Louisiana State Univ. (1972) Graduate Faculty
Meade, C. Wade; Professor, History - BS, MS, Louisiana Polytechnic Institute; PhD, Univ. of Texas (1967) Graduate Faculty
Means, Thomas Lee; Professor, Business Communication and Head, Department of Computer Information Systems and Analysis - BS, Southern Utah; MS, DBE, Brigham Young Univ. (1978) Graduate Faculty
Meng, Dave X.; Assistant Professor, Math - BS, Nanjing Institute of Technology; MS, Worcester Polytechnic Univ.; PhD, Tulane Univ. (1999) Graduate Faculty
Merchant, David; Assistant Professor, Systems Librarian - BA, MS, Univ. of Tennessee (1998)
Merritt, Kevin; Instructor, Speech - BA, Western Washington Univ.; MA, Oklahoma State Univ. (1997)
Mesak, Hani I.; Professor, Quantitative Analysis - BS, Graduate Diploma, Cairo Univ.; PhD, Univ. of Pennsylvania (1989) Graduate Faculty
Miller, Edward J., III; Associate Professor, Curriculum, Instruction, and Leadership - BS, MA, Louisiana Tech Univ.; EDD, North Texas State Univ. (1977)
Miller, Mark Joseph; Professor, Psychology and Behavioral Sciences - BA, MA, PhD, Univ. of Akron (1980) Graduate Faculty
Mills, David Keith; Associate Professor and Director, Biological Sciences - BA, Indiana Univ.; MA, PhD, Univ. of Illinois (1994) Graduate Faculty
Milstead, Pamela T.; Instructor, Computer Information Systems - BS, MS, Louisiana Tech Univ. (1989)
Minor, Dennis Earl; Professor, English and Associate Dean, Graduate Studies & Research, College of Liberal Arts - BA, MA, PhD, Texas A&M Univ. (1974) Graduate Faculty
Moegle, Mary Steele; Assistant Professor, Music – BM and MA, Middle Tennessee State Univ.; DMA, Univ. of Colorado at Boulder (2000)
Molaison, Elaine F.; Assistant Professor, Nutrition and Dietetics – BS, Univ. of Southwestern Louisiana; MS, Louisiana Tech Univ.; PhD, Univ. of Southern Mississippi (2000)
Moore, Pamela V.; Associate Professor and Interim Director, Nursing - BSN, MSN, Northwestern State Univ. (1989)
Moran, Robert W.; Professor, Architecture - BS, Northeast Louisiana Univ.; BA, B. ARCH, Louisiana Tech Univ. (1978)
Mukherjee, Debi; Adjunct Assistant Professor, Biomedical Engineering, Coordinator of Bioengineering for Louisiana State Univ. Medical Center in Shreveport - BS, MS, D.Sc., Massachusetts Institute of Technology; MBA, Univ. of Connecticut (1992)
Murimi, Mary W.; Assistant Professor, Nutrition and Dietetics - BS, Mundelein College; MS, Eastern Illinois Univ.; PhD, Iowa State Univ. (1998) Graduate Faculty
Murphey, Mark W.; Assistant Professor, Animal Science - BS, MS, Sul Ross Univ.; PhD, Texas A&M Univ. (1997) Graduate Faculty
Murray, Paul; Assistant Professor, Health Information Management - RRA, BS, MBA, Louisiana Tech Univ. (1991)
Myers, Lori A.; Instructor, Family and Consumer Sciences – BS, MS, Louisiana Tech Univ. (2000)
Nantze, Joyce ; Clinical Assistant Professor, Medical Technology - BS, Univ. of New Mexico (1993)
Napper, Stanley Arthur; Professor, Biomedical Engineering and Academic Director of Biomedical, Mechanical, and Industrial Engineering - BS, PhD, Louisiana Tech Univ. (1984) Graduate Faculty
Nash, David M., III; Clinical Professor, Biological Sciences - BA, Rice Univ., MD, Univ. of Texas-Southwestern Medical School (1995)
Nassar, Raja; Professor, Mathematics and Statistics - BS, American Univ.; MS, Univ. of Idaho; PhD, Univ. of California (1993) Graduate Faculty
Nelson, James Douglas; Professor, Civil Engineering; Associate Dean for Undergraduate Studies, College of Engineering and Science - BS, MS, Louisiana Tech Univ.; PhD, Colorado State Univ., P.E. (1980) Graduate Faculty
Newbold, Ray Alan; Professor, School of Forestry - BSF, MS, South Illinois Univ.; PhD, Mississippi State Univ. (1980) Graduate Faculty
Nunnery, Mandy; Adjunct Instructor, Biomedical Engineering – MS EE (Rehabilitation Engineer)
Obernuefemann, Kelly Lynn; Assistant Professor, History – BA, Southern Illinois Univ.-Edwardsville; MA, Univ. of Charleston-The Citadel; PhD, George Washington Univ. (2001) Graduate Faculty
O'Boyle, Edward John; Associate Professor, Economics, and Research Associate, Administration and Business Research - BA, DePaul Univ.; PhD, St. Louis Univ. (1977)
O'Donnell, Doran; Assistant Professor, Speech – BA, Univ. of Colorado; MA, The Univ. of Cincinnati (2001) Graduate Faculty
O'Neal, Michael B.; Ben T. Bogard Associate Professor, Computer Science - BS, MS, Louisiana Tech Univ., PhD, Univ. of Southwestern La. (1987) Graduate Faculty

Olcott, Bruce M.; Adjunct Professor, Agricultural Sciences - BS, College of William and Mary; MS, Washington State Univ.; DVM, Univ. of Georgia (1996)
Owens, Carol; Assistant Professor, Nursing - BSN, Mississippi Univ. for Women; MSN, Northwestern State Univ. (1996)
Owens, Reginald L.; Associate Professor, Journalism; BA, Louisiana Tech Univ.; MS, Univ. of Illinois-Urbana;PhD, Univ. of Texas-Austin (1997)
Ozment, Richard; Associate Professor, Professional Aviation - BS, Air Force Academy; MS, USC (1985)
Pace, Kimberly; Adjunct Instructor, Biomedical Engineering – MS BmE (Rehabilitation Engineer)
Page, Timothy G.; Adjunct Professor, Agricultural Sciences -BS, MS, Sam Houston State Univ.; PhD, Louisiana State Univ. (1996) Graduate Faculty
Page, Michael S.; Assistant Professor, Education; Coordinator of Instructional Technology - BA, MEd, Univ. of Louisiana at Monroe; EdD, Louisiana Tech Univ. (1999)
Palmer, James; Assistant Professor, Chemical Engineering – BS and PhD, Univ. of Arkansas (2000)
Parker, D. Randall; Assistant Professor, Curriculum, Instruction, and Leadership - BME, Northeast Louisiana Univ.; MS, Univ. of Illinois; EdD, Univ. of Mississippi (1993) Graduate Faculty
Parker, Jeffrey Lynn; Director of Choirs and Assistant Professor of Music – BA, Ouachita Baptist Univ.; MM, Southwestern Baptist Theological Seminary; DMA, Univ. of South Carolina (2001)
Patterson, Charles; Instructor, Mathematics and Statistics – BS, MS, Louisiana Tech Univ. (2000)
Patterson, William B.; Assistant Professor, Forestry - BA, Davidson College; MS, Univ. of Tennessee-Knoxville; PhD, Louisiana State Univ. (1997) Graduate Faculty
Patton, Stephen R.; Assistant Professor, Chemistry - BS, Spring Arbor College; MS, Wayne State Univ.; PhD, Oakland Univ. (1999) Graduate Faculty
Payne, Shirley S.; Associate Professor, Nursing - BSN, MSN, Northwestern State Univ. (1991)
Payne, Stephen M.; Instructor, English – BA, MA, Louisiana Tech Univ. (2000)
Pennathur, Anita K.; Assistant Professor, Finance – BC, St. Francis College; PhD, Univ. of Alabama (1999) Graduate Faculty
Peper, Stephanie T.; Instructor, Speech – BA, MA, Louisiana Tech Univ. (2001) Graduate Faculty
Phillips, Kerrilyn R.; Assistant Professor, Speech – BA, MA, Northeast Louisiana Univ. (2000) Graduate Faculty
Phillips, Thomas James, Jr.; Professor, Accounting and Director, School of Professional Accountancy - BS, Univ. of Southwestern Louisiana; MS, Louisiana State Univ.; PhD, Georgia State Univ. (1987) Graduate Faculty
Phoha, Vir; Associate Professor and Program Chair, Computer Science – BS, MS, Kurukshetra Univ.; MS, PhD, Texas Tech Univ. (2000) Graduate Faculty
Pigg, Jason; Professor and Assistant Professor, Social Science – BS, Univ. of Iowa; PhD, The Ohio State Univ. (2000)
Pinkston, Edwin Stewart; Professor, Art - BFA, Louisiana College; MA, Louisiana State Univ. (1968) Graduate Faculty
Poe, Laine O.; Clinical Instructor, Medical Technology - BS, Louisiana College (1994)
Ponder, Nathan Homer; Assistant Professor, Math - BS, Louisiana Tech Univ.; Master of Theological Studies (MTS), Harvard Divinity School; MS, Univ. of Texas; PhD, Tulane Univ. (1999) Graduate Faculty
Pope, Janet Faye; Director and Associate Professor, School of Human Ecology -BS, Louisiana Tech Univ.; MS, Louisiana Tech Univ.; PhD, Univ. of Tennessee (1991) Graduate Faculty
Posey, Clyde L.; Professor, Accounting - BA, Univ. of Texas at El Paso; MBA, Univ. of Texas at Austin; PhD, Oklahoma State Univ. (1978) Graduate Faculty
Powell, Tamara M.; Assistant Professor, English – BA, Hendrix College; MA, Univ. of Arkansas at Fayetteville; PhD, Bowling Green Univ. (1997) Graduate Faculty
Puljak, Karl; Assistant Professor, Architecture - BArch, Kansas State Univ.; MArch, Cranbrook Academy of Art (1997)
Pullis, Joe Milton; Professor, Business Communication - BS, ME, EDD, North Texas State Univ. (1967) Graduate Faculty
Pumphrey, Anita; Instructor, Family & Child Studies - BS, Purdue Univ.; MS, Louisiana Tech Univ. (1995)
Pumphrey, Norman D.; Associate Professor, Civil Engineering - BS, Louisiana Tech Univ.; MS, Univ. of Missouri- Rolla; PhD, Purdue Univ., P.E. (1990) Graduate Faculty
Ramachandran, Balachandran; Associate Professor of Chemistry and Academic Director of Chemistry and Physics - BA, Univ. of Calicut; MS, Indian Institute of Technology; PhD, Kansas State Univ. (1989) Graduate Faculty
Ramsey, Linda Lee; Instructor, Biological Sciences - BS, MS, Texas Tech Univ. (1988)
Ramsey, Paul R.; Professor, Biological Sciences - BS, MS, Texas Tech Univ.; PhD, Univ. of Georgia (1975) Graduate Faculty
Rasbury, Michael; Instructor, School of the Performing Arts – BA, MA, Louisiana Tech Univ. (1994)
Ray, John William, Jr.; Associate Professor, Electrical Engineering Technology; Coordinator of Electrical Engineering Technology - BSEE, MSEE, DE Louisiana Tech Univ. (1988)
Rea, Kenneth Wesley; Professor, History; Vice-President for Academic Affairs - BA, Louisiana Polytechnic Institute; MA, PhD, Univ. of Colorado (1968) Graduate Faculty
Reagan, Shirley P.; Dean, College of Applied and Natural Sciences and Professor, Family Management and Consumer Studies - BS, PhD, Louisiana Tech Univ.; MS, Florida State Univ. (1970) Graduate Faculty
Reneau, Daniel D.; President; Professor, Biomedical Engineering - BS, MS, Louisiana Polytechnic Institute; PhD, Clemson Univ. (1967) Graduate Faculty
Richardson, Jo A.; Associate Professor, Social Sciences - BA, Univ. of Alabama-Birmingham; MA, Univ. of Mississippi; PhD, Univ. of New Orleans (1992)
Riser, Samuel P.; Assistant Professor and Farm Manager - BS, Louisiana Tech Univ. (1977)
Roach, Susan; Professor, English - BA, Louisiana Tech Univ.; MA, Univ. of Arkansas; PhD, Univ. of Texas (1989) Graduate Faculty
Robbins, Dorothy D.; Instructor, English – BA, Oklahoma City Univ.; MA, Univ. of South Dakota; PhD, Univ. of Nebraska-Lincoln (2000)
Robbins, Kenneth R.; Director and Professor, School of the Performing Arts - AA, Young Harris College; BSEd, Georgia Southern College; MFA, Univ. of Georgia; PhD, Southern Illinois Univ. at Carbondale (1998) Graduate Faculty
Roberts, Freddy L.; Civil Engineering - BS, MS, Univ. of Arkansas; PhD, Univ. of Texas, P.E. (1990) Graduate Faculty
Robinson, Charles J.; Professor, Biomedical Engineering and Director, Center for Biomedical Engineering and Rehabilitation Science - BS, College of Steubenville; MS, Ohio State Univ.; DSC, Washington Univ. (1999) Graduate Faculty
Robinson, Dianne T.; Assistant Professor, Psychology & Behavioral Sciences - BS, Auburn Univ.; MS, Troy State Univ.; PhD, Western Michigan Univ. (1999)
Robken, James E.; Assistant Professor, Director of Bands, BA, Louisiana Tech Univ.; MA, Univ. of Arkansas (1991)
Robken, Sheri R.; Instructor of Music – BSEd, Univ. of Arkansas; MS, Louisiana Tech Univ. (2001)
Roemer, Louis E.; Professor, Electrical Engineering - BS, MS, PhD, Univ. of Delaware (1989) Graduate Faculty
Ross, Gaye; Instructor, English -BA, MA, Louisiana Tech Univ. (1988)
Rovnyak, Steven M.; Assistant Professor, Electrical Engineering - AB, BS, MS, PhD, Cornell Univ. (1996) Graduate Faculty
Rowell, Charles Emmett; Associate Professor, Forestry - BSF, MS, Mississippi State Univ.; PhD, Univ. of Kentucky (1984)
Rudnicki, Robert W.; Assistant Professor, English – BA, Centenary College; MA and PhD, Texas A&M (2000) Graduate Faculty
Russell, Waggoner; Instructor/Laboratory Supervisor of Plant Science – BS, Northeast Louisiana Univ.; MS – Louisiana Tech Univ. (2000)
Ryland, Adam B.; Instructor, English – BA, Univ. of Southwestern Louisiana; MA, Univ. of Louisiana-Monroe (1999)
Saber, Aziz; Assistant Professor, Civil Engineering - BS, American Univ. of Beirut; MS, Univ. of Michigan; PhD, Georgia Institute of Technology (1998) Graduate Faculty

Sadiq, Riyaz A.; Assistant Professor, Forestry - BS, Univ. of Kashmie; MS, Univ. of Idaho; PhD, Univ. of Toronto (1998) Graduate Faculty
Sahin, Mesut; Assistant Professor, Biomedical Engineering – BS, Istanbul Technical Univ.; MS, PhD, Case Western Reserve Univ. (2001) Graduate Faculty
Sawyer, H. Lee, Jr.; Assistant Professor, Physics - BS, Northeast Louisiana Univ.; PhD, Florida State Univ. (1996)Graduate Faculty
Schenk, Peggy Lou; Assistant Professor, Prescott Library, Reference Librarian - BA, Purdue Univ.; MPH, East Tennessee State Univ.; MSLIS, Univ. of Tennessee. (1991)
Schroeder, Bernd S.W.; Associate Professor, Mathematics and Statistics - Vordiplom (equiv. BS), Technische Universitaet Berlin; MS, PhD, Kansas State Univ. (1997)
Schubert, Roy W.; Professor, Biomedical Engineering - BA, MA, PhD, Case Western Reserve Univ. (1977) Graduate Faculty
Schuder, Veronica; Instructor, English – BA, Univ. of Pittsburgh; MA, Univ. of Ohio (2000)
Schwartz, Jonathan; Assistant Professor, Psychology and Behavioral Sciences – BA, Univ. of New York-Buffalo; MA, PhD, New Mexico–Las Cruces (2001) Graduate Faculty
Sciro, Cherrie; Coordinator of Theatre and Associate Professor, Speech/Theatre - BA, MFA, Louisiana Tech Univ. (1992) Graduate Faculty
Sellers, Larry Gail; Professor, Biological Sciences - BS, Bob Jones Univ.; MS, Michigan State Univ.; PhD, North Carolina State Univ. (1974) Graduate Faculty
Shattuck, Sim; Assistant Professor, English - BA, George Mason Univ.; BA, MA, Northeast Louisiana Univ.; PhD, Univ. of Southern Mississippi (1982) Graduate Faculty
Shaver, John E., Jr.; Associate Professor, Accounting - BS, MBA, Louisiana Polytechnic Institute; DBA, Louisiana Tech Univ. (1967)
Sheehan, D'eane S.; Instructor, Biological Sciences - BS, Univ. of California-Irvine; MS, Louisiana Tech Univ. (1989)
Sherman, Angela F.; Assistant Professor, Speech – BA, MA, Louisiana Tech Univ. (1999) Graduate Faculty
Shipp, Mike; Adjunct Instructor, Biomedical Engineering – M.Ed., CDRS (Adaptive Driver Educator)
Shoemaker, Sheryl S.; Assistant Professor, Speech – BA, MA, Louisiana Tech Univ.; AuD, Central Michigan Univ. (2000) Graduate Faculty
Simeon, Patricia; Instructor, Mathematics and Statistics – BS, MEd, Southeastern Louisiana Univ.; EdD, Grambling State Univ. (2001)
Simicevic, Neven; Assistant Professor, Physics - BS, MS, PhD, Univ. of Zagreb, Croatia (1997)Graduate Faculty
Simmons, James Richard, Jr.; Assistant Professor, English - BA, Coastal Carolina College; MA, PhD, Univ. of South Carolina (1997) Graduate Faculty
Sims, Stephanie P.; Instructor, English – BA, MA, Louisiana Tech Univ. (2001)
Siriwardane, Upali H. M.; Associate Professor, Chemistry - BS, Sri Lanka; MS, Concordia Univ.; PhD, Ohio State (1989) Graduate Faculty
Sistrunk, Glynn Dale; Professor and Head, Professional Aviation - BS, Univ. of Nebraska at Omaha; MS, Univ. of Central Michigan (1985)
Sivils, Linda E.; Associate Professor, Fashion & Textiles - BS, Louisiana State Univ.; MS, Univ. of Tennessee; PhD, Texas Woman's Univ. (1967) Graduate Faculty
Slaven, John E.; Clinical Professor, Medical Technology – BS, Univ. of Arkansas; MD, Univ. of Arkansas School of Medicine (2000)
Slocum, Beverly Gates; Instructor, A. E. Phillips - BA, MA, Louisiana Tech Univ. (1987)
Smith, Allison D.; Assistant Professor, English - BA, MA, California State Univ., Long Beach; PhD, Univ. of Illinois (1997) Graduate Faculty
Smith, Douglas W.; Instructor and Dairy Products Manager, Animal Science - BS, MS, Louisiana Tech Univ. (1997)
Smith, Genaro Ky Ly; Instructor, English – BA, California State Univ.; MA, MFA, McNeese State Univ. (1999)
Smith, Lawrence C.; Professor, Economics,- BS, Mississippi College; MS, Univ. of Southern Mississippi PhD, Univ. of Mississippi (1970)
Smith, Nancy; Clinical Professor, Medical Technology - BS, Louisiana Tech Univ.; MD, Louisiana State Univ. (1983)
Smith, Rebecca; Assistant Professor, Curriculum, Instruction, and Leadership – BS Mississippi State Univ.; MEd, Mississippi College; PhD, Univ. of Texas (2001)
Smith, Winston Paul; Adjunct Professor, Biological Sciences - BS, MS, Louisiana State Univ.; PhD, Oregon State Univ. (1989)
Snow, Lloyd Dale; Professor, Chemistry and Program Chair - BS, MS, Arkansas State; PhD, Oklahoma State. (1979) Graduate Faculty
Soper, William B.; Professor, Psychology and Behavioral Sciences - BA, Bethel College; MS, Fort Hays Univ.; PhD, Univ. of Georgia (1977) Graduate Faculty
Southern, L. Lee; Adjunct Professor, Agricultural Sciences - BS, MS, North Carolina State Univ.; PhD, Univ. of Illinois (1996) Graduate Faculty
Spaulding, James G.; Professor,School of Biological Sciences - BA, Kalamazoo College; MA, PhD, Univ. of Wisconsin (1980) Graduate Faculty
Springer, Thomas Philip; Professor, Psychology and Behavioral Sciences - BS, Univ. of Alabama; MS, PhD, Tulane Univ. (1974) Graduate Faculty
Starr, Charles R., Jr.; Clinical Instructor, Medical Technology - BS, Northwestern Louisiana Univ. (1993)
Stegeman, Jerold D.; Assistant Professor, Civil Engineering – BS, Colorado State Univ.; MS, PhD, Univ. of Nevada (2002)
Stenzel, Rebecca Lawrence; Director of Libraries, Associate Professor, Prescott Library, Ross Endowed Professorship - BS, Louisiana State Univ.; MED, Nicholls State Univ.; EdD, Louisiana State Univ. (1991)
Stephens, Charlotte S.; Associate Professor, Computer Information Systems and Analysis - BA Georgia State Univ., MBA and PhD Auburn Univ. (2000) Graduate Faculty
Sterling, Raymond L.; Professor, Civil Engineering - BE, Univ. of Sheffield; MS, PhD, Univ. of Minnesota. (1995) Graduate Faculty
Stockton, Catherine; Principal/Instructor, A. E. Phillips - BA, MED, EDD, Northeast Louisiana Univ. (1996) Graduate Faculty
Stokley, Gary Martin; Associate Professor, Social Sciences - BA, East Texas Baptist College; MA, Stephen F. Austin; PhD, Louisiana State Univ. (1971)
Stout, Henry; Director, School of Architecture; Associate Professor, Architecture - B ARCH, M ARCH, Texas A&M (1985) Graduate Faculty
Sule, Dileep R.; Professor, Industrial Engineering - BS, Ranchi Univ., India; ME, PhD, Texas A&M Univ. (1969) Graduate Faculty
Summers, Martha; Acting Assistant Professor, Curriculum, Instruction, and Leadership - BS, ABD, Grambling State Univ.; MEd, Univ. of Illinois (1996)
Tabor, Carole Sims; Director, School of Literature & Language; Professor, English, - BA, Louisiana Polytechnic Institute; MA, PhD, Texas Christian Univ. (1968) Graduate Faculty
Tang, Zaiyong; Assistant Professor, Computer Information Systems and Analysis – BE, Chongquing Univ.; MBS, Washington State Univ.; PhD Univ. of Florida (2000)
Tassin, Maurice F. Jr.; Associate Professor, Accounting - BS, Univ. of Southwestern Univ.; MS, PhD, Louisiana State Univ. (1975)
Tayebi, Abdelkader K.; Assistant Professor, Civil Engineering - BS, Ecole Nationale Polytechnic; MS, McGill Univ.; PhD, Cornell Univ. (2000) Graduate Faculty
Temple, Mary Eleanor Harris; Assistant Professor, English - BA, MA, Louisiana Tech Univ. (1975)
Thigpen, Sally E.; Associate Professor, Psychology and Behavioral Sciences – BA, Louisiana Tech Univ.; MS, Univ. of Louisiana-Monroe; PhD, Univ. of North Texas (1982) Graduate Faculty
Thomas, Lajeane Gentry; Professor, Curriculum, Instruction, and Leadership - BA, MA, Louisiana Tech Univ.; PhD, Northeast Louisiana Univ. (1980) Graduate Faculty
Thompson, Ronald H.; Professor, Chemical Engineering, Director of Nuclear Center - BS, MS, Louisiana Polytechnic Institute; PhD, Univ. of Arkansas (1973) Graduate Faculty
Tobacyk, Jerome J.; Professor, Psychology and Behavioral Sciences - BA, SUNY; MA, PhD, Univ. of Florida (1977) Graduate Faculty
Toburen, Robert K.; Professor and Head, Social Sciences - BA, Wichita State Univ.; MA, PhD, Univ. of Kansas (1971)
Todd, Pam; Instructor, Nursing - BSN, Northwestern State Univ. (1993)
Torma, Michael J.; Adjunct Assistant Professor, Biomedical Engineering – AB, Rockhurst College; MD, Univ. of Alabama School of Medicine (1968)
Traylor, Charles A., III; Clinical Associate Professor, Medical Technology - BS, Louisiana Tech Univ.; JD, Louisiana State Univ. (1991)

Tso, Patrick; Adjunct Professor, Biomedical Engineering - BS, PhD, Univ. of Western Australia (1994)
Tubb, Judy H.; Instructor, English – BA, MA, Univ. of Louisiana-Monroe (2001)
Tucker, James D.; Major, USAF, Assistant Professor of Aerospace Studies – BS, Louisiana Tech Univ.; MAS, Troy State Univ. (2001)
Turner, Galen; Assistant Professor, Mathematics and Statistics – BH, Loyola Univ.; MS, PhD, Louisiana State Univ. (2001)
Tuten, Mary B.; Assistant Professor, Family and Child Studies - BA, MA, Louisiana Tech Univ. (1973)
Twedt, Daniel J.; Adjunct Professor, Biological Sciences - BA, MS, PhD, North Dakota State Univ.; MS, Western Kentucky Univ. (1992)
Varahramyan, Kody; Associate Dean, Research and Graduate Studies, College of Engineering and Science; Director, Institute for Micromanufacturing; Entergy Professor, Electrical Engineering - BS, Univ. of Illinois; MS, PhD, Rensselaer Polytechnic Institute (1992) Graduate Faculty
Vavrek, Donna; Assistant Professor, Prescott Library, Reference Librarian – BA, Univ. of New Hampshire; MLS, Univ. of Pittsburgh (2001)
Vavrek, Milan; Assistant Professor, Biological Sciences - BS, Kent State Univ.; MS, PhD, West Virginia Univ. (1996) Graduate Faculty
Vellard, Kathy; Associate Professor, Art - BA, MA, MFA, Louisiana Tech Univ. (1990) Graduate Faculty
Vessel, Amy Massey; Assistant Professor, Curriculum, Instruction, and Leadership – BA, MA, Louisiana Tech Univ.; EdD, Univ. of Alabama (2000)
Wakeman, John Marshall; Professor, Biological Sciences - BS, Southern Illinois Univ.; MS, Univ. of Alabama; PhD, Univ. of Texas (1978) Graduate Faculty
Walczyk, Jeffrey J.; Associate Professor, Psychology and Behavioral Sciences - BS, Le Moyne College; MA, PhD, Syracuse Univ. (1996)Graduate Faculty
Walden, Stephen E., Instructor, English – BA, Univ. of Central Arkansas; MA, Univ. of New Orleans (2001)
Walker, Harrell Lynn; Professor, Biological Sciences - BS, Louisiana Tech Univ.; MS, PhD, Univ. of Kentucky (1987) Graduate Faculty
Walters, Bruce A.; Assistant Professor, Management and Marketing - BBA and MBA, Texas A&M; PhD, Univ. of Texas at Arlington (2000) Graduate Faculty
Warner, Evelyn B.; Assistant Professor, A. E. Phillips - BS, MS, Louisiana Polytechnic Institute (1976)
Washington, Daphne; Adjunct Instructor, Biomedical Engineering – MA, CCC/SLP (Speech/Language Pathologist)
Weaver, G. H.; Professor, School of Forestry -BS, MS, Purdue Univ.; PhD, Texas A&M Univ. (1992) Graduate Faculty
Webre, Stephen; Professor and Head, History - BA, USL; MA, PhD, Tulane Univ. (1982) Graduate Faculty
Wells, Donald H.; Professor, Psychology and Behavioral Sciences - BA, MED, PhD, Univ. of Florida. (1980) Graduate Faculty
Wells, Steven P.; Assistant Professor, Physics - BS, St. John Fisher College; MS, SUNY Binghamton; MS, PhD, Indiana Univ. (1997) Graduate Faculty
Wesson, Laura L.; Assistant Professor Chemical Engineering – BS and PhD, Univ. of Oklahoma (2001) Graduate Faculty
White, James D.; Instructor/Laboratory Supervisor, Biological Sciences – BS, MS, Louisiana Tech Univ. (1992)
White, Neil Ron; Associate Professor, Journalism - BS, Mississippi College; MA, Louisiana State Univ. (1969)
Wibker, Elizabeth Anne; Associate Professor and Associate Dean for Finance and Administration, College of Administration & Business - BS, MS, DBA, Louisiana Tech Univ. (1979)
Widman, Lawrence C.; Adjunct Assistant Professor, Biomedical Engineering - BS, Massachusetts Institute of Technology; PhD, Columbia Univ.; MD, Columbia Univ. School of Medicine (1991)
Wiley, James W.; Adjunct Professor, Biological Sciences - BS, Univ. of Montana; MA, California State Univ.; PhD, Univ. of Miami (1992) Graduate Faculty
Wilkinson, Lamar Vincent; Associate Professor, Psychology and Behavioral Science - BS, Univ. of Texas; MS, St. Mary's Univ.; EDD, East Texas State Univ. (1975)Graduate Faculty
Willemsen, Matthew; Assistant Professor of Art; BFA, Univ. of Iowa; MFA, Univ. of Iowa (2000) Graduate Faculty
Williams, Laura A.; Assistant Professor, Dept. of Management and Marketing - BS, Northwestern State Univ.; MBA, Baylor Univ.; PhD, Louisiana State Univ. (2000) Graduate Faculty
Williams, Tamika D.; Assistant Professor of Art; BFA, Mississippi Valley State Univ.; MFA, Memphis College of Art (2000) Graduate Faculty
Willis, Travis H.; Professor, Management - BS, PhD, Louisiana State Univ.; MBA, Memphis State Univ. (1985) Graduate Faculty
Willoughby, William; Assistant Professor, Architecture – BS, MArch, Kent State Univ. (1999)
Wilson, Marcia H.; Adjunct Professor, Biological Sciences - BS, South Dakota State Univ.; MS, PhD, Oregon State Univ. (1992) **Wilson, Mary L.;** Lab Instructor, Nursing - BSN, Northwestern State Univ. (1993)
Winstead, Charles William; Professor, Agronomy - BS, MS, PhD, Mississippi State Univ. (1973) Graduate Faculty
Witriol, Norman M.; Professor, Physics - MS, PhD, Brandeis Univ. (1977) Graduate Faculty
Wreden, Alexis; Assistant Professor, Architecture – BA, Longwood College; MFA, Indiana Univ.; MLand.Arch, Harvard Univ. (1999)
Wylie, David F.; Associate Professor, Music - BA, BM Louisiana Tech Univ.; MM, Univ. of Arkansas (1978)
Young, Dawn B.; Clinical Assistant Professor, Medical Technology - BCJ, Louisiana State Univ.; MA, Northeast Louisiana Univ. (1985)
Young, Tony R.; Associate Professor and Head, Psychology and Behavioral Sciences - BA, Louisiana Tech Univ.; MA, Fuller Seminary; PhD, Fuller Graduate School of Psychology (1983) Graduate Faculty
Zalesch, Saul; Associate Professor, Art - BA, Johns Hopkins Univ.; MA, PhD, Univ. of Delaware; JD, Univ. of Maryland Law School (1994) Graduate Faculty
Zhong, Jianyuang; Assistant Professor, Mathematics and Statistics – BS, Beijing Univ.; MS, PhD, Louisiana State Univ. (2000) Graduate Faculty
Zhong, Zhenchen; Assistant Professor, Physics/IfM - BS, Jiansu Univ. of S&T; MS, Institute of Metal Research; PhD, Univ. of Cambridge (1999) Graduate Faculty
Zink, Deborah R.; Clinical Associate Professor, Medical Technology - BS, MBA, Lamar Univ. (1990)
Zotov, Natalia; Associate Professor, Mathematics and Statistics - BS, MS, Univ. of Canterbury, New Zealand; PhD, Univ. of Otago, New Zealand (1990) Graduate Faculty
Zou, Li-He; Professor, Electrical Engineering - BS, Tsinghua Univ., Beijing; MS, PhD, Princeton (1990) Graduate Faculty
Zumwalt, Gary Spencer; Associate Professor, Program Chair, Geosciences - BA, Fresno State College; MS, PhD, Univ. of California (1980) Graduate Faculty
Zylks, Richard W.; Clinical Assistant Professor, Biological Sciences - BS, Southern Arkansas Univ. (1993)

UNIVERSITY ADMINISTRATORS

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