2001-2002 UNDERGRADUATE CATALOG
ARKANSAS TECH UNIVERSITY

RUSSELLVILLE, ARKANSAS

WWW.ATU.EDU

Accreditation

Arkansas Tech University is accredited by The Higher Learning Commission and a member of the North Central Association of Colleges and Schools, 30 N. LaSalle Street, Suite 2400, Chicago, Illinois 60602. (312) 263-0456

Program Accreditations

AACSB-The International Association for Management Education
600 Emerson Road, Suite 300
St. Louis, MO 63141-6762
(314) 872-8481

The School of Education at Arkansas Tech University is accredited by the National Council for Accreditation of Teacher Education
2010 Massachusetts Avenue NW, Suite 500
Washington, DC 20036
(202) 466-7496
This accreditation covers the institution's initial teacher preparation and advanced educator preparations programs.

National Association for Sport and Physical Education
1900 Association Drive
Reston, VA 20191
(703) 476-3410

National Association of Schools of Music
11250 Roger Bacon Drive, Suite 21
Reston, VA 20190
(202) 466-7496

National League for Nursing Accrediting Commission
61 Broadway-33rd Floor
New York, NY 10006
(703) 437-0700

Commission on Accreditation of Allied Health Education Programs
(Health Information Administrator and Medical Assistant)
35 East Wacker Drive, Suite 1970
Chicago, IL 60601-2208
(312) 553-9355

Engineering Accreditation Commission of the
Accreditation Board for Engineering and Technology
111 Market Place, Suite 1050
Baltimore, MD 21202
(410) 347-7700

American Chemical Society
1155 16th Street NW
Washington, DC 20036
(202) 872-4600

National Recreation and Park Administration Council on Accreditation
22377 Belmont Ridge Road
Ashburn, VA 20148
(703) 858-2150

National Institutional Memberships

American Association of Colleges for Teacher Education
American Association of Collegiate Registrars and Admissions Officers
AACSB-The International Association for Management Education
American Society for Engineering Education
American Association of State Colleges and Universities
Conference of Southern Graduate Schools
Council for the Advancement and Support of Education
Council on Hotel, Restaurant and Institutional Education
Mathematical Association of America
NAFSA: Association of International Educators
National Association of College Admissions Counselors
National Association of Schools of Music
National Association of Student Personnel Administrators
National Collegiate Athletic Association
National Commission on Accrediting
National Council on Rehabilitation Education
National League for Nursing
National Recreation and Park Association

Enrolling In College

Students are urged to acquaint themselves with this catalog thoroughly. It sets forth policies and procedures for enrolling and successfully completing the various programs of study.

The basic responsibilities of selecting a major field, enrolling in the prescribed courses of study in the field, and complying with the University's requirements for graduation rest with the student; however, University personnel will assist the student with problems encountered. Further assistance is offered in the form of capable departmental advisors, a full-time guidance and counseling service, and an appropriate graduation check list to serve as a reminder of the various graduation requirements.

For More Information

General Information	968-0389
Academic Advising Center	964-0843
Academic Affairs Office	968-0319
Admission Office	968-0343
Alumni Office	968-0242
Director of Athletics	968-0345
Business Office	968-0300
Community Education Office	968-0318
Counseling Office	968-0302
Disabilities Coordinator	968-0698
	TDD 964-0536
Financial Aid	968-0399
	TDD 968-0224
Graduate Studies	968-0398
President's Office	968-0237
Professional Development Institute	968-0397
Public Safety	968-0222
Registrar's Office	968-0272
	TDD 964-0860
Student Accounts	968-0271
Student Services	968-0239
Learning Assistance and Testing Center	968-0302
Student Housing	968-0376
Tucker Coliseum	968-0337

Arkansas Tech University does not discriminate on the basis of race, color, sex, national origin, or disability in any of its policies, practices, or procedures. This includes, but is not limited to, admissions, employment, financial aid, or educational services. Arkansas Tech University complies with all applicable state and federal laws including, but not limited to, Title VI and Title VII of the Civil Rights Act of 1964 as amended, the Age Discrimination in Employment Act of 1967 as amended, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act Amendments of 1974, the Civil Rights Restoration Act of 1987, the Americans with Disabilities Act of 1990, and the Civil Rights Act of 1991.

It is the policy of Arkansas Tech University to maintain the University Community as a place of work and study for staff, faculty, and students free of harassment, to include sexual and gender harassment and all forms of sexual intimidation and exploitation. All students, staff, and faculty should be aware both that the University is concerned and prepared to take action to prevent and correct such behavior. The determination of what constitutes sexual harassment will vary with the particular circumstances, but it may be described generally as unwanted sexual behavior, such as physical contact and verbal comments or suggestions which adversely affect the working or learning environment of others. Anyone who is subjected to offensive sexual behavior is encouraged to pursue the matter through the established informal or formal grievance procedures. Generally the informal procedures afford an opportunity to explore a problem and consider alternative means for its resolution.

A copy of the annual budget is available in the Ross Pendergraft Library and Technology Center. A copy of the annual financial report is available from the Office of the Vice President for Administration and Finance in Room 207 of the Administration Building.

The provisions of this catalog are subject to change without notice and do not constitute an irrevocable contract between any student and Arkansas Tech University.

ACADEMIC CALENDAR 2002 - 2004

Summer Session 2002

First Term

Registration for first term	June 3
Classes begin	June 4
Last day to register and add courses/change sections	June 5
Last day to officially withdraw/drop courses with 80 percent reduction of fees	June 10
Preregistration for freshmen for fall semester	May - August
Last day to drop courses with a "W" or change from credit to audit	June 28
Holiday	(Thursday) July 4
First term ends	July 5

Second Term

Registration for second term	July 8
Classes begin	July 9
Last day to register and add courses/change sections	July 10
Last day to officially withdraw/drop courses with 80 percent reduction of fees	July 15
Last day to drop courses with a "W" or change from credit to audit	August 2
Second term ends	August 9
Orientation and assessment activities	August 3 - 20

Fall Semester 2002

Registration and new student orientation	August 19 - 20
Classes begin	August 21
Last day to officially withdraw/drop courses with full reduction of fees	August 22
Last day to register and add courses/change sections	August 27
Labor Day holiday	September 2
Last day to officially withdraw/drop courses with 80 percent reduction of fees	September 25
Deadline for degree audit (transcript evaluation), December 2003 graduates	October 4
Mid-term	October 10
Last day to drop courses with a "W" or change from credit to audit	October 30
Assessment activities	November 2 - 9
Preregistration for spring semester	November
Last day to drop courses with "WP" or "WF"	November 20
Thanksgiving holidays	5:00 p.m., November 26
	7:00 a.m., December 2
Last day of classes	December 5
Reading Day	December 6
Final examinations	6:00 a.m., December 9
	3:00 p.m., December 13
Graduation	December 14

Spring Semester - 2003

Registration	January 9 - 10
Classes begin	January 13
Last day to officially withdraw/drop courses with full reduction of fees	January 14
Last day to register and add courses/change sections	January 17
Martin Luther King Day holiday	January 20
Last day to officially withdraw/drop courses with 80 percent reduction of fees	February 17
Mid-term	March 4
Deadline for degree audit (transcript evaluation), May 2004 graduates	March 7
Spring holidays	7:00 a.m. - March 17
	7:00 a.m., - March 24
Last day to drop courses with a "W" or change from credit to audit	March 28
Deadline for degree audit (transcript evaluation), summer 2004 graduates	April 4
Assessment activities	April 5 - 12
Preregistration for fall semester	April

	Last day to drop courses with "WP" or "WF"	April 18
	Last day of classes	May 1
	Reading Day	May 2
	Final examinations	6:00 a.m., May 5
		3:00 p.m., May 9
	Graduation	May 10
Summer Session 2003		
First Term (tentative)	Registration for first term	June 2
	Classes begin	June 3
	Last day to register and add courses/change sections	June 4
	Last day to officially withdraw/drop courses with 80 percent reduction of fees	June 9
	Preregistration for freshmen for fall semester	May - August
	Last day to drop courses with a "W" or change from credit to audit	June 27
	First term ends	July 3
	Holiday	(Friday) July 4
Second Term	Registration for second term	July 7
	Classes begin	July 8
	Last day to register and add courses/change sections	July 9
	Last day to officially withdraw/drop courses with 80 percent reduction of fees	July 14
	Last day to drop courses with a "W" or change from credit to audit	August 1
	Second term ends	August 8
	Orientation and assessment activities	August 2 - 19
Fall Semester 2003		
(tentative)	Registration and new student orientation	August 18 - 19
	Classes begin	August 20
	Last day to officially withdraw/drop courses with full reduction of fees	August 21
	Last day to register and add courses/change sections	August 26
	Labor Day holiday	September 1
	Last day to officially withdraw/drop courses with 80 percent reduction of fees	September 24
	Deadline for degree audit (transcript evaluation), December 2004 graduates	October 3
	Mid-term	October 9
	Last day to drop courses with a "W" or change from credit to audit	October 29
	Assessment activities	November 1 - 8
	Preregistration for spring semester	November
	Last day to drop courses with "WP" or "WF"	November 19
	Thanksgiving holidays	5:00 p.m., November 25
		7:00 a.m., December 1
	Last day of classes	December 4
	Reading Day	December 5
	Final examinations	6:00 a.m., December 8
		3:00 p.m., December 12
	Graduation	December 13
Spring Semester 2004		
(tentative)	Registration	January 15 - 16
	Martin Luther King Day holiday	January 19
	Classes begin	January 20
	Last day to officially withdraw/drop courses with full reduction of fees	January 21
	Last day to register and add courses/change sections	January 26
	Last day to officially withdraw/drop courses with 80 percent reduction of fees	February 23
	Mid-term	March 9
	Deadline for degree audit (transcript evaluation), May 2005 graduates	March 5
	Spring holidays	7:00 a.m., March 22
		7:00 a.m., March 29

Last day to drop courses with a "W" or change from credit to audit	April 2
Deadline for degree audit (transcript evaluation), summer 2005 graduates	April 2
Assessment activities	April 3 - 10
Preregistration for fall semester	April
Last day to drop courses with "WP" or "WF"	April 23
Last day of classes	May 6
Reading Day	May 7
Final examinations	6:00 a.m., May 10
	3:00 p.m., May 14
Graduation	May 15

Summer Session 2004
(tentative)

Registration for first term	June 7
Classes begin	June 8
Last day to register and add courses/change sections	June 9
Last day to officially withdraw/drop courses with 80 percent reduction of fees	June 14
Preregistration for freshmen for fall semester	May - August
Last day to drop courses with a "W" or change from credit to audit	July 2
Holiday	(Monday) July 5
First term ends	July 9

Second Term

Registration for second term	July 12
Classes begin	July 13
Last day to register and add courses/change sections	July 14
Last day to officially withdraw/drop courses with 80 percent reduction of fees	July 19
Last day to drop courses with a "W" or change from credit to audit	August 6
Second term ends	August 13
Orientation and assessment activities	August 14 - 24

NOTE: The calendar for Weekend College or Extended Degree Center classes may differ from what is printed above. Please check with the instructor and/or the Registrar's Office for more information.

General Information

The Campus

Arkansas Tech University, with its spacious 518-acre campus, is located on the northern edge of the city of Russellville. This growing community, with a population of approximately 24,000, is ideally situated between the mountains of the Ozark National Forest on the north and those of the Ouachita National Forest on the south. It is midway between the state's two largest population centers, Fort Smith, 85 miles to the west, and Little Rock, 75 miles to the east. Interstate Highway 40 passes just north of the campus and connects these two cities.

In addition, Russellville is the crossroads of activity for State Highways 7, 22, 64, and 124. The historic natural crossing of the Arkansas River at Dardanelle is four miles to the south. The navigable river forms a 36,600 acre lake with 315 miles of shoreline behind a lock and dam located just southwest of the city. The Missouri Pacific Railroad passes through the city and parallels the river between Little Rock and Fort Smith.

Russellville is the county seat of Pope County. Historic Dwight Mission, established by the American Board of Foreign Missions among the Cherokee Indians in 1821, was located a short distance west of the campus of Arkansas Tech University on Illinois Bayou, where that stream is now crossed by Highway 64. Descendants of Cephas Washburn, the intrepid missionary who founded the mission and named it for Timothy Dwight of Yale, live in Russellville at the present time.

Arkansas Tech University is in the center of an area experiencing vigorous industrial development as evidenced by the growth of local industry and the number of national concerns locating plants in the area. Nuclear One, the first nuclear power plant completed in the Southwest, and a second nuclear power unit have been constructed near Russellville by Entergy, thus assuring continued industrial growth. Headquarters for District 9 of the Arkansas Highway Department and for the Ozark-St. Francis National Forests are located in Russellville. The McClellan-Kerr Navigation Project is having a significant effect upon the development of the area. The impoundment of the Arkansas River has formed Lake Dardanelle which borders the west edge of the campus. Poultry, cattle, soybeans, cotton, and lumber are the principal money crops in the area served by Arkansas Tech University.

History

Arkansas Tech University was created by an act of the Arkansas General Assembly in 1909. Under the provisions of this Act, the state was divided into four Agricultural School Districts. Boards of Trustees were appointed by the Governor with the approval of the Senate, and appropriations were made for the erection of buildings and employment of a faculty for a district agricultural school in each of the four districts.

Twenty counties of northwestern Arkansas were designated as the Second District. Governor Donaghey appointed W. U. Balkman, J. R. Williams, H. S. Mobley, A. D. Shinn, and O. P. Nixon as a Board of Trustees for the Second District Agricultural School. Several towns made efforts to have the school located in their midst. After considering all proposals, the Board of Trustees decided to locate it at Russellville,

which had made an offer of a tract of 400 acres of land adjoining the city limits and a cash bonus of several thousand dollars.

The school opened its doors for students in the fall of 1910. The first class to graduate from the school was the high school class of 1912. In 1921-22, a freshman year of college work was offered, in 1922-23 a second year, in 1923-24 a third year, and in 1924-25 a fourth year. The General Assembly in 1925 changed the name from the Second District Agricultural School to Arkansas Polytechnic College with power to grant degrees. The class of 1925 was graduated with the degree of bachelor of science, as was the class of 1926. The effort to maintain a four-year high school and a four-year college proved beyond the resources of the institution at that time, and it became a junior college in the fall of 1927. The four years of secondary work were dropped, one year at a time, and the last high school class was the class of 1929.

Changing and increased demands for college education in Arkansas caused the Board of Trustees in 1948 to convert the college from a junior college to a degree-granting institution. In 1948-49 the college offered the third year of college work, and in 1949-50 the fourth year, with the first baccalaureate degrees awarded at the end of the 1949-50 spring semester. A graduate program leading to the degree of master of education was established in 1976. Graduate courses were first offered by Arkansas Tech in the summer of 1975. See page 29 for a complete list of programs leading to a master's degree.

In accordance with an act of the Arkansas General Assembly and by the authority of the State of Arkansas Board of Higher Education, the name of Arkansas Polytechnic College was changed to Arkansas Tech University, effective July 9, 1976.

Arkansas Tech has consistently adjusted its scope to accommodate immediate and future needs. In 1985 the institution reorganized its programs into the Schools of Business, Education, Liberal and Fine Arts, Physical and Life Sciences, and Systems Science.

Mission Statement

adopted March 17, 1994:

Arkansas Tech University, founded in 1909, is a multi-purpose, state-supported institution of higher education dedicated to providing an opportunity for higher education to the people of Arkansas and to serving the intellectual and cultural needs of the region in which it is located. The University offers a variety of programs committed to excellence in undergraduate and graduate studies. These programs are designed to prepare students to meet the demands of an increasingly competitive and intellectually challenging future by providing opportunities for intellectual growth, skill development, and career preparation. The institution monitors student mastery of general education and specialized studies, retention and graduation rates, and quality of teaching and academic programs to verify and facilitate demonstrable improvements in student knowledge and skills between entrance and graduation.

The basis for the student's intellectual growth and scholarly skill development is the general education program, which provides the context for more advanced and specialized studies and the foundation for life-long learning. The general education curriculum is designed to provide university-level experiences that engender capabilities in communication, abstract inquiry, critical thinking, analysis of data, and

logical reasoning; an understanding of scientific inquiry, global issues, historical perspectives, literary and philosophical ideas, and social and governmental processes; the development of ethical perspectives; and an appreciation for fine and performing arts.

The University provides a range of specialized studies to prepare students to enter career fields or to continue their education at the post-graduate level. Specialized studies are offered within several areas of emphasis: business, professional education, liberal and fine arts, physical and life sciences, information technology, engineering, and applied sciences. Graduate work leading to the master's degree in selected disciplines provides advanced, specialized education which strengthens the academic and professional competence of students and enhances their capacities for scholarly inquiry and research.

The primary function of the University is teaching. Scholarly research and other professional activities of the faculty, continuing education, and community service are encouraged, promoted, and supported. In keeping with its focus on teaching, the University seeks to recruit, develop, and retain faculty who are dedicated to quality teaching and providing dynamic classroom learning experiences that integrate theory and practice. The institution values academic freedom and the concept of shared governance. Faculty and student organizations such as the Faculty Senate, Graduate Council, and the Student Government Association participate in university governance by making policy recommendations. Leadership and management of the University is the responsibility of the President. Governance of the institution is the responsibility of the Board of Trustees.

Programs of Study

In carrying out its mission, the University offers programs of study leading to baccalaureate degrees in the areas listed below. Programs of study leading to a master's degree are offered in Liberal Arts, English, History, Multimedia Journalism, Information Technology, Fisheries and Wildlife Biology, Counseling, Educational Leadership, Elementary Education, Gifted Education, Instructional Improvement, Teaching Learning and Leadership, and Secondary Education with specialization in English, instructional technology, mathematics, physical education, and social studies. (Please refer to graduate catalog for additional information.)

School of Business

Accounting
Business Education
Economics and Finance
Management and Marketing

School of Community Education and Professional Development

Early Childhood Education
Emergency Administration and Management
Industrial Plant Maintenance
Industrial Electronic Technology
Industrial Systems

School of Education

Early Childhood Education
Health and Physical Education
Middle Level Education
Secondary Education

School of Liberal and Fine Arts

Art
Art Education
Creative Writing
English
Foreign Language
General Studies
History and Political Science
International Studies
Journalism
Music
Music Education
Psychology
Rehabilitation Science
Sociology
Speech

School of Physical and Life Sciences

Biology
Chemistry
Engineering Physics
Fisheries and Wildlife Biology
Geology
Health Information Management
Medical Assistant
Medical Technology
Nursing
Physical Science

School of Systems Science

Agriculture Business
Computer Science
Electrical Engineering
Engineering
Hospitality Administration
Information Technology
Mathematics
Mechanical Engineering
Nuclear Technology
Recreation and Park Administration

Physical Plant

The physical plant of Arkansas Tech University includes sixty-one buildings located on a tract of 518 acres near the northern boundary of the city of Russellville. Acreage provides space for varsity and intramural recreational activities, drill fields, and the University farm. Additionally, the University has approximately 130 acres, which front on Lake Dardanelle, leased from the Corps of Engineers. The McClellan-Kerr Arkansas River Navigation System provides a freshwater lake which borders on the west edge of the campus.

All instructional programs are taught in buildings which have been specifically designed or modified to complement the projected instructional tasks. The Corley Building, completed in 1988, provides instructional space and state of the art laboratories for engineering, business, computer science, accounting and mathematics. The Center for Energy Studies, completed in the spring of 1994, supports courses and research in neutron science, nuclear engineering, materials science, and other areas related to energy and the environment. During the spring of 1993, Dean Hall renovation was completed to provide modern facilities for the instructional programs in agriculture, nursing, foreign languages, and graduate studies.

Arkansas Tech University has several resources which lend themselves to serving the cultural and recreational needs of the University and surrounding community. The John E. Tucker Coliseum complements the instructional program by providing a modern setting for concerts, conventions, and sporting events. The Hull Physical Education building has an Olympic-style swimming pool which is used for physical education classes; for recreational swimming for students, faculty, and staff; and by the community swim club. The Witherspoon Arts and Humanities Building has a modern auditorium with a seating capacity of 742. The L.L "Doc" Bryan Student Services Center and the Student Activities Building constitute the main facilities for student services, student government, publications, and indoor recreational activities. The Museum of Prehistory and History, located in Tucker Hall, contains exhibits on archeology and early history of western Arkansas; museum lectures and events address cultural needs on the campus and in the community, and offer opportunities for students in the Parks, Recreation and Hospitality Department to become involved in interpretive activities.

The Ross Pendergraft Library and Technology Center houses more than 1,080,000 items for use. Included in this number are 142,000 volumes; 810,000 microforms; 88,000 government documents; 40,000 ANO/NRC materials; and 1,245 periodical subscriptions. Among these holdings are extensive backfiles of journals and newspapers. Copiers and microform reader-printers are available using the VendaCard system. The library is a member of AMIGOS/OCLC, a regional broker of international bibliographic data and information services. Over eighty electronic databases covering most subjects are accessible from the library and over the Internet and through the Tech homepage at <http://library.atu.edu>. Assistance in the retrieval and use of materials is provided by seven professional librarians, seven paraprofessional staff, and a number of part-time employees. Librarian-mediated online searches are provided on request. Materials not available in the Library may be

requested through our interlibrary loan system, normally at no charge. The Library is the publisher of the retrospective Arkansas Gazette Index.

The Pendergraft Library is open approximately 90 hours per week during fall and spring semesters. The state-of-the-art facility includes two open computer labs, two instructional computer labs, one special purpose lab, two distance learning classrooms, a large conference room, five breakout/meeting rooms, twelve group study rooms, satellite downlink, cable TV connections, 108 publicly accessible computers, 58 lab computers, and about 400 data drops for laptop computers.

ADMISSION

Admission to Arkansas Tech University is open to any qualified individual subject to the admission requirements listed below. However, the University reserves the right to reject the application of any individual whose records do not satisfy the requirements. Every student must file an initial application for admission. Applications and additional information about Arkansas Tech are available from the Office of Admissions, Doc Bryan Student Services Center, Office 141, Arkansas Tech University, Russellville, Arkansas 72801.

Students may apply on-line from the Tech website at http://www.atu.edu/ or email for additional information via tech.enroll@mail.atu.edu.

Tech is subject to and endorses both the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. The Affirmative Action Officer serves as the coordinator for these federal programs. The Affirmative Action Office is located in Dean 110 , Arkansas Tech University, Russellville, AR 72801, and can be contacted by calling (501) 968-0234. TDD users call (501) 964-0536, or FAX (501) 968-0205.

Persons born after January 1, 1957, must furnish proof of immunity against measles and rubella to the Tech Student Health Services prior to enrollment in classes.

Entering freshmen must comply with the following admission requirements and freshman placement standards. This includes students who enter with college credit earned prior to high school graduation, during summer following high school graduation, or by advanced placement.

Residual college entrance exams, taken on other college campuses, will not be accepted for admissions.

First-Semester Freshmen from Accredited Schools

Admission requirements for entering freshmen who graduate from an Arkansas public or an Arkansas accredited, non-public secondary school are as follows:

1. Completion of secondary school graduation requirements evidenced by submission of official secondary school transcript showing completion of the curriculum required for graduation to include class rank, date of graduation, and a minimum 2.0 grade point average from an Arkansas public secondary school or an accredited non-public secondary school. Persons graduating from an accredited, non-public, secondary school must have a minimum GPA of 2.0 in the secondary school core course recommendation or its equivalent.
2. Participation in the American College Testing (ACT)1 program or Scholastic Aptitude Test (SAT-1)2 showing a minimum composite score on the ACT of 15 or a minimum SAT-1 of 710.

First-Semester Freshmen from Non-Accredited Schools or Home School Programs

Admission requirements for entering freshmen who graduate from an Arkansas non-accredited non-public secondary school or a home school program are as follows:

1. Completion of secondary school graduation requirements evidenced by submission of official secondary school transcript or certificate showing

completion of the curriculum required for graduation to include class rank, date of graduation, and a minimum 2.0 grade point average.

2. Participation in the American College Testing (ACT)[1] program or Scholastic Aptitude Test (SAT-1)[2] showing a minimum composite score on the ACT of 19 or a minimum SAT-1 of 910.

NOTE: Entering freshmen taking the SAT-1 must also take the Test of Standard Written English (TSWE)[3] for placement in English.

Out-of-State Applicants:

1. Must meet the university's secondary core course recommendations or equivalent.
2. Graduate from a regionally accredited secondary school.
3. Have a minimum 2.00 GPA on a 4.00 scale.
4. Participate in the ACT Assessment and have a composite score of 17, or participate in the SAT-1 with a minimum total score of 810. International students who have not already taken SAT or ACT will be required to take an appropriate placement examination, administered on campus, to assist in advisement.

Secondary School Core Course Recommendation

Twenty-one credits minimum earned from grades nine through twelve from the following core courses or equivalent are recommended:

English - 4 units, with emphasis on writing skills, but not to include oral communications.

Oral Communications - ½ unit of oral communications.

Science - 3 units, to include biology, chemistry, or physics.

Mathematics - 3 units, to include algebra I, algebra II, and geometry.

Social Studies - 3 units, to include 1 unit each of American history, world history, and ½ unit of American government, or civics and ½ unit of social studies.

Physical Education - ½ unit of physical education.

Health and Safety - ½ unit of health and safety.

Fine Arts - ½ unit of fine arts.

Foreign Language - 2 units in one foreign language.

Electives - 4 units of electives.

Freshman Placement Standards

In accordance with Arkansas Code of 1987 Annotated, paragraph 6-61-110, first-time entering undergraduate students (includes students who enter college the summer of 1995 and students who enter with advanced standing) who enroll in

baccalaureate degree programs or associate-degree transfer programs must meet the following placement standards prior to enrollment in college-level mathematics or English composition courses.

Mathematics--Students scoring 19 or above on the mathematics section of the ACT, 460 or above on the quantitative portion of SAT-1, may enroll in college-level mathematics courses. For students who take the COMPASS, those scoring a 59 or above on the mathematics section may enroll in college-level mathematics courses. Students not meeting the standard must successfully complete a developmental (pre-college level) mathematics program or programs, demonstrating achievement at least as sophisticated as intermediate algebra, in order to be placed in college-level mathematics courses.

English Composition--Students scoring 19 or above on the English section of the ACT or 460 or above on the SAT II writing test may enroll in college-level English courses. For students who take the COMPASS, those scoring 75 or above on the writing section may enroll in college-level English courses. Students not meeting the standard must successfully complete a developmental program or programs in English composition before being awarded credit for English composition.

Reading--Students scoring 19 or above on the reading section of the ACT, 460 or above on the verbal section of SAT-1 will be considered to have met minimal reading skill requirements. For students who take the COMPASS, those scoring 82 or above on the reading section will be considered to have met minimal reading skill requirements. English composition may be taken concurrent with or subsequent to any required developmental reading program.

Students who are required to complete developmental program(s) in mathematics, English, and/or reading, must enroll in the appropriate course during their first semester at Tech and in each subsequent semester until the developmental program is completed. A grade of "C" or better is required in all developmental courses before the student may advance to higher level courses.

[1]American College Testing Program's ACT Assessment Test

[2]College Board's Scholastic Aptitude Test

[3]College Board's Test of Standard Written English

Former Students

Students who have interrupted their attendance at Arkansas Tech University will usually be automatically re-admitted if the academic record for the last semester of college work is satisfactory. However, another application for admission must be filed by students who have not attended Arkansas Tech during the past year and by students who have attended another college since attending Arkansas Tech University. Academic clemency may be granted in accordance with the clemency policy (see Clemency in the "Regulations and Procedures" section of this catalog).

Transfer Students

Transfer students making application for admission to Arkansas Tech University

must submit official transcripts from all colleges/universities where they have been officially registered. Students seeking transfer of credit from other institutions may be asked to provide a catalog or course description from the transfer institution.

Students with fewer than 24 semester hours of earned college-level credit must also submit a high school transcript and must request current ACT or SAT scores be sent to the University. In the event that receipt of a student's transcript is unavoidably delayed, as may frequently occur at mid-year, a transfer student may be admitted provisionally pending receipt of the transcript, but the University reserves the right to require immediate withdrawal if the previous record does not meet admission requirements.

Applicants for transfer must have earned a GPA of 2.00 (on a 4.00 scale) on all college-level courses attempted and be eligible to re-enroll at the last college or university attended.

Financial aid applicants must request a financial aid transcript from each post-secondary institution attended whether they received aid from that institution or not. Aid applications will not be processed until these transcripts are received by the financial aid office.

Transfer Credit

Credit from colleges and universities not accredited by one of the six regional accreditation associations may not be accepted for transfer credit. Courses with grades below "C" are not transferrable. A maximum of 68 semester hours of acceptable credit may be transferred from community colleges.

International Student Admissions

Any student who is not a U.S. citizen or a permanent resident of the United States is considered an international student. A brief description of the information required to make application for admission to Arkansas Tech University follows.

1. **Application**--an application for admission form, properly completed.
2. **Application fee**--a non-refundable application fee of $30 (U.S.).
3. **Academic records**--**MUST** be originals or school-certified copies of originals of all academic records with official English translations. Notarized copies will not be accepted. Students seeking transfer credit from other institutions must provide English translations of course descriptions. If unable to provide the information, the student may contact an approved credential evaluation service to evaluate transfer courses. A list of approved services can be obtained from the Registrar's Office.
4. **English Proficiency--**demonstrate English proficiency. Must meet one of the following:
   a. A minimum score of 500 on the written TOEFL (Test of English as a Foreign Language) or 173 on the computerized TOEFL. Scores **MUST** be received directly from the Educational Testing Service (school code-6010). Students may also take any similar test of English proficiency approved by Arkansas Tech University at a site authorized by Arkansas Tech University.

b. Successful completion of an English as a Second Language (ESL) program at a site approved by Arkansas Tech University.

5. **Evidence of sufficient financial support**--approximately $15,500 (U.S.) is needed for 12 months of study, approximately $11,284 is needed for nine months (2 semesters); certified evidence of the source and amount of support must accompany the application. All international students will pay out-of-state tuition and will be assessed an international student services fee each semester. In addition, international students must purchase a health insurance policy required by Tech prior to enrollment.

The application for admission and all documentation should be submitted by May 1 for the fall semester, October 1 for the spring semester, and March 1 for summer sessions for priority consideration. Admission will not be granted until all documents have been received and evaluated. Please read under "Admission" for further requirements which may also apply. Upon acceptance, notification will be sent to the student along with an I-20 (Certificate of Eligibility). Full payment of tuition and fees must be paid at registration each semester.

Detailed information regarding international student admissions may be obtained by contacting: International Student Services, Doc Bryan Student Services Center, Office 163, Arkansas Tech University, Russellville, Arkansas 72801-2222, USA; telephone (501) 964-0832; FAX (501) 880-2039.

Non-Traditional Freshmen Admission

Non-high school graduates 18 years of age or older who have not been enrolled in secondary school during the twelve-month period prior to application for admission to Arkansas Tech may enter by furnishing a GED certificate with a minimum passing composite score of 45. Participation in the ACT Assessment or the SAT-1 is required for admission. Entering freshmen who have been out of an educational setting for five or more years are required to take the ACT Assessment or the Computerized-Adaptive Placement Assessment and Support System (COMPASS) test. For more information, call the Office of Admissions at (501) 968-0343.

Conditional Admission

The Conditional Admission Policy allows students who do not meet standard admission requirements the opportunity to enroll at the University. The student admitted to the University under this policy must complete 12 hours with a 2.00 GPA to be removed from conditional admission status and to become eligible for enrollment under standard policies. For more information, call the Office of Admissions at (501) 968-0343.

Non-Degree Admission

Arkansas Tech University serves the general public by allowing individuals to enroll in classes for professional development and self-fulfillment without meeting regular admission requirements. The student admitted under this policy, who later chooses to pursue a degree, must reapply for admission as a degree seeking student and meet standard admission policies. A maximum of 27 credit hours earned as a non-degree seeking student may be applied to a degree program. Financial Aid benefits

may not be granted to students admitted as non-degree seeking. For more information, call the Office of Admissions at (501) 968-0343.

Secondary School-University Admissions

Arkansas Tech University welcomes the opportunity to serve area schools by complementing their programs with special opportunities for students to enroll for college courses and earn college credit by attending Tech during summer sessions or by attending on a part-time basis during the regular academic year, concurrent with enrollment in secondary school. Upon completion of a course(s), students may choose whether or not to have the course(s) and grade(s) recorded for college credit. Students who do not wish to have the course(s) and grade(s) recorded for college credit must notify the Registrar in writing within thirty days of the end of the term or semester. A student must reapply each term or semester attended. The course(s) agreed upon by the student and their high school must also be approved for each term or semester attended by the Director of the Academic Advising Center. Secondary school students are not eligible to enroll in developmental courses in mathematics, English and reading.

Secondary School Program

The Arkansas Code of 1987 Annotated, paragraph 6-18-223, makes provisions whereby a student who is enrolled in a public school in Arkansas and who has completed the eighth grade is eligible to enroll at Arkansas Tech University upon approval of the appropriate public school official, provided the student presents an ACT composite of 15 and ranks in the upper 25% of their class. Students who successfully complete a course(s) shall be entitled to receive academic credit, applicable to graduation requirements, at Arkansas Tech University and at the public school in which the student is enrolled, in accordance with the public school's guidelines. Students admitted into the secondary school program will be advised and only allowed to enroll in approved, college-level courses.

Gifted-Talented Youth Program

Exceptionally gifted and talented students who do not qualify for admission through the Secondary School Program may earn college credit through Arkansas Tech's special program for gifted and talented youth.

Admission criteria are:

1. Evidence of exceptional ability.
2. Formal test data.
3. Written permission of parent or guardian.
4. Recommendation by teacher or other professional personnel.
5. Written approval of school principal and/or administrator.
6. Interview by University committee.

The University reserves the right to reject the application for admission of any individual whose enrollment may be deemed detrimental to the quality of life and/or instructional programs of the University.

American College Testing Program

Entering freshmen are required to provide Arkansas Tech University with American College Testing (ACT) Assessment scores for purposes of admission,

academic placement, and the awarding of academic scholarships. Arkansas Tech University will not accept ACT score reports that are more than five years old. Entering freshmen who have not taken the ACT prior to arrival at Arkansas Tech or whose score report is more than five years old are required to take the Residual ACT during the orientation period preceding their first semester. The ACT, which covers English, mathematics, reading and science reasoning, is administered five times per year at test centers, such as high schools, colleges and universities, across the nation. ACT information and registration forms may be obtained from local high schools, colleges, or universities. You may also contact the Arkansas Tech University Learning Assistance and Testing Center for ACT information and registration materials. In addition, you may correspond directly with ACT at American College Testing Program, P.O. Box 168, Iowa City, Iowa 52243 or http://www.act.org.

The 2001-2002 ACT national test schedule is as follows:

Test Date	Registration Deadline
October 27, 2001	September21, 2001
December 8, 2001	November 2, 2001
February 9, 2002	January 4, 2002
April 6, 2002	March 1, 2002
June 8, 2002	May 3, 2002

Please check with your local high school, college, university or the Arkansas Tech University Learning Assistance and Testing Center for the 2002-2003 test schedule.

Computerized-Adaptive Placement Assessment and Support System

Entering freshmen who have been out of an educational setting for five or more years are required to provide Tech with American College Testing (ACT) Assessment or Computerized-Adaptive Placement Assessment and Support System (COMPASS) scores for purposes of admission and academic placement. COMPASS is administered on the computer and consists of three tests: writing, math, and reading. Tech will not accept ACT or COMPASS score reports that are more than five years old. Entering freshmen who have been out of an educational setting for five or more years and who have not taken the ACT or COMPASS prior to arrival at Tech or whose score report is more than five years old are required to take the Residual ACT or COMPASS during the orientation period preceding the first semester. Please contact the Arkansas Tech University Learning Assistance and Testing Center for ACT or COMPASS information at (501) 968-0302.

Student Retention and Graduation Rates

For information about retention and graduation rates at Tech, please contact the Office of Academic Affairs or the Registrar's Office.

Selecting a Major Field

Arkansas Tech University encourages students to give long and serious thought to the selection of a major field of study. They should determine the academic pursuits

that lead to the vocations most attractive not only in financial gain but in interest as well. Then they should examine the program of study most closely related to their interest areas.

Undecided Study

Many students entering the University have not chosen a major. The individual who has not decided on a major may enroll in general education courses which are required of all candidates for the baccalaureate degree (see page 78). Students enrolling as "undecided" majors will be assigned to the Academic Advising Center. The Academic Advising Center is located in Room 101 in Bryan Hall and can be contacted by calling (501) 964-0843. Students enrolled as "undecided" may select a major at any time. A student must select a major, however, during the semester in which the student earns 45 credit hours.

Procedure for Scheduling Courses

Detailed procedures for registration/preregistration are contained each semester in the schedule of courses. Prior to enrollment, students, in consultation with an academic advisor in their major field of study, prepare a class schedule (permit to register). Subsequently, each student obtains certification of housing space assigned on campus or a certificate of acceptability for off-campus quarters, presents the permit to register for official enrollment in classes, pays fees and, if living on campus, pays room rent and board.

Course symbols, the four-digit numbers used to identify courses within a department, have the following significance: the first digit of the number denotes the year level at which the course is given; the second and third digits differentiate the course from others in the department; the fourth digit shows the number of credit hours given.

Graduate Program

The requirements for the degree of master of education, master of science in education, master of liberal arts, master of arts, master of science, and master of fisheries and wildlife in biology are set forth in the publication entitled "Graduate Catalog". Information may be obtained by contacting Dr. Eldon Clary, Dean of Graduate Studies, Tomlinson Building, Room 104, telephone (501) 968-0398.

FEES AND EXPENSES

General

Students enrolling at Arkansas Tech University are assessed tuition and fees to cover the costs of instruction and other student services common to a university setting. Additionally, certain courses requiring individual instruction or special facilities carry fees which are listed with the course description.

Students enrolling for twelve or more semester hours of undergraduate courses for the fall or spring semester are considered full-time and are charged tuition according to residency, as listed below. Students enrolling for fewer than twelve semester hours for the fall or spring semester are assessed tuition for each course at the appropriate credit-hour rate. Up to $9.30 per credit hour ($18.60 per credit hour for out-of-state students) of the tuition fee for courses taken during the fall and spring semesters will be allocated to athletics.

Full-time students enrolled for the fall or spring semester are assessed a $25 student activity fee, a $50 technology fee, a $5 publications fee, a $5 assessment fee, and a $5 transcript fee. Students registering for fewer than twelve semester hours during the fall or spring semester will be charged a $5 assessment fee, a $50 technology fee, a $5 activity fee, and a $5 transcript fee which entitles them to a photo ID card and admission to all University-sponsored activities on the same basis as full-time students. Part-time students must pay an additional $10 in order to receive a yearbook.

All fees and charges to students are set by the University's Board of Trustees. Every attempt is made to establish charges in time to appear in the catalog; however, when this is not possible, estimated charges are shown. **The University reserves the right to change fees and charges at any time if conditions necessitate or permit the change.**

Total University charges for in-state residents for the school year (full-time fall and spring semesters) are estimated as follows:

Tuition	$2,588
Student activity, publications, technology, assessment, and transcript fees	180
Room and board	3,090
University Commons Apartments	2,800-3,376
Books and supplies	800

Tuitioin for courses taken during summer and mini-sessions will be assessed at the appropriate credit-hour rate for each course. A $5 assessment fee, a $5 transcript fee, and a $50 technology fee are also assessed each summer and mini-session.

Tuition, fees, and one-fourth of the room and board charges for on campus students, are due and payable prior to the beginning of each term. The balance of room and board charges may be paid in three monthly installments.

Fees and Charges

Prices quoted are rates currently in place for the 2000-2001 academic year. All rates are subject to change as necessary.

Undergraduate tuition[1,2,3]	In-State	Out-of-State
Full-time (12 or more credit hours per semester)	$1,294	$2,588
Summer and part-time (per credit hour)	114	228
Graduate tuition[1,2,3] Per credit hour	116	232
Student activity fee (required fall and spring semesters)		
Full-time students	25	25
Part-time students	5	5
Publications fee (required fall and spring semesters)		
Full-time students	5	5
Technology fee (required each semester or term)	50	50
Assessment fee (required each semester or term)	5	5
Transcript fee (required each semester or term)	5	5
International Student service fee		
Per semester (fall/spring)	30	
Per summer term (five-week)	15	
Per mini-term	10	
Residence Hall Board Charges		
19 meal-per-week plan	770	
15 meal-per-week + $100 Declining Balance Dollars	843	
165 meals + $100 Declining Balance Dollars	797	
145 meals + $130 Declining Balance Dollars	797	
106 meals + $150 Declining Balance Dollars	769	
Residence Hall Room Charges		
Brown, Caraway, Massie and Turner Halls	775	
Jones and Roush Halls	825	
Paine Hall	950	
University Commons Apartments		
2 bedroom apartments	1,688	
4 bedroom apartments	1,400	
Graduation fee	25	
Late registration fee	25	
Adding/dropping courses	5	

Returned check	10
Replacement of ID card	25
Post office box rent (required of students living in university housing)	10
Auto registration	10
Parking fees and fines (see Traffic Regulations) (Students parking on campus between 8 a.m. and 5 p.m. Monday through Friday must have parking decals.)	

[1]Students who enroll for undergraduate and graduate courses will be charged the appropriate credit hour rate for each course.

[2]Tuition for courses offered through the University Center at Westark College may vary from the charges listed in this section.

[3]Required course fees are listed along with the appropriate course descriptions.

Estimated Living Expenses

All students living in residence halls are required to purchase a meal plan; Declining Balance Dollars (DCB) may be used in Chambers Cafeteria, Doc Bryan Food Court, and Convenience Store.

The room and board charge for students living in residence halls includes basic telephone service. Payment for room and board is due and payable prior to the beginning of the semester. Students may, however, arrange to make four equal payments--one prior to the beginning of the semester and one by the 15th of each month. Room and board charges are subject to change.

When space permits, students may be allowed single occupancy of a residence hall room. The additional charge of $350 per semester is payable in full upon receipt of the monthly statement.

Residence halls are closed between fall and spring semesters. However, students may remain in the residence halls during all other breaks, provided they notify the residence hall staff of their intentions prior to the break period.

University Commons apartments are available to upperclass students. No board plan is required, and students are able to sign a nine-month or twelve-month contract. Two bedroom and four bedroom apartments are available.

Payment of Accounts

Tuition and all other fees and charges, including room and board charges for students in residence halls, are due and payable prior to the beginning of each term at the Student Accounts Office, in the Doc Bryan Student Services Center, Office 133. Financial settlement, which consists of tuition, fees, and at least one-fourth of room and board, may be made by personal payment or **authorized** financial aid (loans, scholarships, grants, third parties, etc.). Visa, MasterCard, and Discover credit cards are accepted for all charges. Registration is not complete until all financial obligations have been met satisfactorily. Failure to make financial settlement may result in cancellation of the class schedule.

The student identification number (social security number) is assigned as the student's account number for billing purposes. An alternate nine digit number will be assigned as the student's account number upon written request to the Registrar. Monthly billing statements are payable upon receipt. Invoices for preregistration are mailed approximately thirty days prior to the first day of class. **All** preregistered

students must return the top portion of the preregistration invoice along with applicable payment by the due date to confirm enrollment.

Students with delinquent accounts are not eligible for food service, graduation, transcripts, recommendations, advance registration, or readmission to any term. Collection fees for outstanding debts owed to the University may be assessed to the student.

The University reserves the right to amend or add to the regulations of the institution, including those concerning charges and methods of payment, and to make such changes applicable to students enrolled in the University, as well as to new students.

Reduction of Fees and Charges

Reduction of Tuition for Official Withdrawal

Students officially withdrawing from the University by the end of the fifth day of the semester in a summer term, as listed in the Academic Calendar, beginning on page 4, will receive an 80 percent reduction of tuition for courses which they are enrolled in at time of withdrawal. No reduction will be made after the fifth day of the summer semester. No reduction in fees will be made beginning with the first day of class of the summer term.

Students registering for the fall or spring semester but officially withdrawing from the University by the end of the second day of the semester, as listed in the Academic Calendar in this catalog, beginning on page 4, will receive a 100 percent reduction of tuition and fees. Room and Board will be reduced on a pro rata basis. Thereafter, students officially withdrawing by the end of the twenty-fifth day of the semester will receive an 80 percent reduction of tuition only for courses in which they are enrolled at time of withdrawal. No reduction will be made after the twenty-fifth day of the semester. No reduction in fees will be made after the second day of the semester.

In the event a student is receiving student financial aid, any refund amount attributable to a loan, grant, or scholarship will be returned to the appropriate account and not to the student. The amount returned to Federal programs will be the amount of unearned Federal aid based on the number of calendar days of attendance up to the sixty percent point of the semester. Aid accounts will be refunded in the following order up to the amount of the original disbursement: Federal Family Education Loan Programs, Federal Perkins Loan Program, Federal PLUS Loan Program, Federal Pell Grant Program, Federal SEOG Program, Arkansas Department of Higher Education Programs, Tech scholarships and private aid. Additionally, students who have received a cash payment of Federal aid money will receive a letter after their withdrawal informing them of any amount to be repaid. These repayments will be made through the Student Accounts Office.

The student will be ineligible for any further Federal financial aid until the required payments are made.

Reduction of Tuition/Fees for Dropping to Fewer Hours

Students dropping to fewer hours before the end of the fifth day of the semester in a summer term as listed in the Academic Calendar, beginning on page 4, will receive an 80 percent reduction for the courses which are dropped. No reduction in tuition will be made after the fifth day of the semester. No reduction in fees will be made once the summer session begins.

Students who are enrolled full-time for the fall or spring semester but drop to fewer than twelve semester hours by the end of the second day of the semester, as listed in the Academic Calendar in this catalog, beginning on page 4, will receive a 100 percent reduction of the difference between the appropriate per-credit-hour amount and the tuition for full-time status. Thereafter, students dropping to fewer than twelve semester hours before the end of the twenty-fifth day of the semester will receive an 80 percent reduction of the difference between the appropriate per-credit-hour amount and the tuition for full-time status. No reduction will be made after the twenty-fifth day of the semester. No reduction in fees will be made after the second day of the semester.

Students enrolled in fewer than twelve hours for the fall or spring semester who drop courses by the end of the second day of the semester, as listed in the Academic Calendar in this catalog, beginning on page 4, will receive a 100 percent reduction of tuition for the courses dropped. Thereafter, students enrolled in fewer than twelve hours who drop courses before the end of the twenty-fifth day of the semester will receive an 80 percent reduction of the difference between the appropriate per-credit-hour amount and the tuition for courses in which they are enrolled at the time of change. No reduction will be made after the twenty-fifth day of the semester. No reduction in fees will be made after the second day of the semester.

Reduction of Room and Board

A student withdrawing from school will be charged pro rata room and board to the date of official withdrawal. Students moving from residence halls between the fall and spring semesters, after indicating they would be in campus housing for the spring semester, will owe a storage charge from the last day of the fall semester through the day the room is vacated. Students moving from the residence hall at their request during an academic year will be charged the full room and board for the housing agreement (semester or year). Students moving into residence halls during a semester will pay a pro rata charge on room and board.

Students moving out of University Commons apartments before the end of their lease term will forfeit their deposit and will be responsible for all apartment rent until such time as the Department of Residence Life finds a tenant to take their place. Students will pay a pro rata charge from the date they moved out until the date the new tenant moves in.

Out-of-State Residence Status for Tuition and Fee Purposes

Students classified as "out-of-state" must pay out-of-state tuition as shown in the section entitled "Fees and Charges."

No student who is a minor shall be admitted to Arkansas Tech University and classified as in-state for fee purposes unless the parent or legal guardian is a bona fide domiciliary of Arkansas and has resided in this state in that status for at least six consecutive months prior to the beginning of the term or semester for which the fees are to be paid.

Any student not a minor must have lived in the state as a non-student for at least six consecutive months prior to the beginning of the term or semester for which fees are to be paid to be classified as an in-state student. The policy in its entirety is available in the Office of the Registrar.

STUDENT SERVICES OPERATIONS

Housing

Single students under 21, and with under 60 hours of college work completed, are required as space permits, to live on campus in University-owned housing units and to purchase a meal plan. This policy affects full-time (twelve hours or more, fall and spring; five hours or more, summer term) students only. Part-time students may reside in University housing with approval from the Department of Residence Life.

Rooms and apartments located on campus are reserved by students in advance of the term of residence. A $25 application fee, payable to Arkansas Tech University, is required of applicants for campus housing.

Residence hall rooms are equipped with beds, mattresses, chairs, mirrors, and desks. Students furnish linens, bedcover and spreads, pillow, and study lamps. Custodians maintain the corridors and utility rooms, but students are responsible for the care, orderliness, and cleanliness of their rooms.

Each residence hall is supervised by a director assisted by student staff members. The Housing Office is located in Room 229 of the L.L. Doc Bryan Student Services Building.

Exemptions from student housing may be requested and will be considered on an individual basis.

Campus Residence Units

The University utilizes seven residence halls. Forty-eight campus apartments are available for upper-division students. The residence halls are air-conditioned and are constructed to accommodate two students per room. All rooms in the residence halls and apartments are equipped with cable television and local telephone service.

Brown Hall

A three-story community for 150 students designed to house 2 students per room. A lounge equipped with a television and recreation area, the Resident Director's apartment and a vending machine room are located on the first floor. Brown Hall is also equipped with laundry facilities and common bathrooms.

Paine Hall

A three-story community for 216 students. Paine Hall is designed to house two students per room who share a private bath. Each room is equipped with two data ports for computer use. There are laundry facilities on each floor as well as study facilities on the second and third floors and a well-equipped kitchen on each of the first floor wings. The two, three story wings are connected by a common area which houses the Resident Director and a hall office, a recreation area, vending area and television area.

Massie Hall

A two-story community for 98 students designed to house 2 students per room. Laundry facilities and common bathrooms are shared by the residents. The first floor offers vending, a television lounge and the Resident Director's apartment.

Turner Hall

A three-story community for 200 students designed to house 2 students per room. Laundry facilities and common bathrooms are shared by the residents on each floor.

The first floor offers vending, a television lounge and the Resident Director's apartment.

Caraway Hall

A four-story community for 98 students designed to house 2 students per room. Caraway Hall is listed on the National Historic Register. The first floor has a large formal lounge, the hall office and the Resident Director's apartment. The fourth floor offers an informal lounge with a kitchen and television. Laundry facilities and common bathrooms are shared by the residents.

Jones Hall

A three-story community designed to house 208 students in suites of two bedrooms with a connecting bath. The lobby, Resident Director's apartment and vending machines are located on the first floor. Lounges equipped with a small kitchenette are located on the second and third floors. A laundry room is located on the second floor.

Roush Hall

A two-story community designed to house 108 students in suites of four consisting of two bedrooms with a connecting bath. A lounge, Resident Director's apartment, vending and a patio are located on the first floor. A laundry room is available on the first floor.

University Commons Apartments

Four units with four-bedroom and two-bedroom apartments are offered to our upper-division students. Each apartment has a living room, kitchen, washer and dryer along with private bedrooms with Internet access. The residents share the common kitchen, washer and dryer, living room space and two full baths in the four-bedroom apartments. The two-bedroom units are comprised of two private bedrooms, a kitchen, washer and dryer, living room and two full baths. University Commons Apartments also have a centrally located clubhouse with a large television area, fitness equipment, restrooms, the apartment staff office, and a full service kitchen.

Department of Public Safety

To report a crime or emergency call the Department of Public Safety at 968-0222 or 911. The Department of Public Safety maintains direct radio contact with the Russellville Police Department and the Russellville Fire Department, and Tech is also served by the Pope County Ambulance Service. To reach the Department of Public Safety from off campus, dial (501) 968-0222. It is the responsibility of the Department of Public Safety to investigate and follow up on all reports of criminal activity on campus. In some cases Public Safety Officers are assisted in their investigations by the Russellville Police Department.

Student Health Clinic

The University provides a health center for use by all students. A registered nurse is on duty during the hours 7:30 - 11:30 a.m. and 12:30 - 4:30 p.m., Monday through Friday, during official school sessions. First aid, within the limits of personnel and supplies which can be maintained in the center, is provided to students at no charge.

Students referred to or requesting services from the center are required to complete a medical history report on forms provided by Arkansas Tech. Medical expenses for services outside the center are the responsibility of the student. Arkansas Tech reserves the right to change the policy and operation procedures of its health

program at the termination of any semester or term.

Student Accident and Health Insurance

Arkansas Tech cooperates with a number of other higher educational institutions in Arkansas to make available a student group insurance policy. Students not adequately covered by an individual or family group insurance policy may purchase this policy at the beginning of any semester. Application forms are mailed to all admitted students each July/August and are available at the Student Health Clinic and Student Services Office.

Disability Services for Students

Arkansas Tech University is committed to providing equal opportunities for higher education to academically qualified individuals who are disabled. Students with disabilities attending Tech will be integrated as completely as possible into the university community. Tech does not offer a specialized curriculum for students with disabilities nor does it assume the role of a rehabilitation center, but does assume responsibility for modifying campus facilities and procedures to accommodate individual needs where feasible.

Services arranged through the University's Disabilities Coordinator include consideration of classroom and building accessibility, planning for adequate travel time between classes, arranging for interpreters, note-taking assistance, alternative testing, and similar types of accommodations. Per individual needs, students who may require academic support are encouraged to utilize tutoring and study skills assistance available to all students through the Learning Assistance and Testing Center and within certain discipline areas.

Tech is subject to and endorses both the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. The Disabilities Coordinator serves as the coordinator for these federal programs. The Disabilities Coordinator is located in the Office of Community Education, Dean Hall, Room 110, Arkansas Tech University, Russellville, AR 72801, and can be contacted by calling (501) 968-0698, for TDD call (501) 964-0536, or by email: judy.robinson@mail.atu.edu.

Learning Assistance and Testing Center

The Learning Assistance and Testing Center (LATC) provides services which assist in the recruitment, retention, and graduation of students. The services offered to students include personal counseling, academic assistance, and testing services.

Counseling services include managing adjustments to college, personal conflict, goal setting, time and stress management, and personal relationship issues. Individuals requiring counseling of a more serious nature are referred to local counseling agencies.

Academic assistance services include academic counseling, arranging for tutorial services, and instruction in study skills development, taking notes, time management, and preparing for exams.

Testing services include providing registration information and materials and administering examinations such as the American College Test Assessment, Graduate Record Exam, Law School Admission Test, Miller Analogies Test, Medical College Admissions Test, National Teacher's Examinations, and others. Test preparation

assistance is available for many of these exams via the LATC.

Credit by examination is also a testing service. It allows an individual to earn college credit by attaining the qualifying score established by Arkansas Tech University. Examinations included in this program are Advanced Placement, College Level Examination Program, National League for Nursing and Arkansas Tech examinations.

The Learning Assistance and Testing Center facilities include a computer lab and a study lab/testing lab. The Center is staffed with a director and two counselors. Arkansas Tech University students may use these services for free (excluding tests). The Learning Assistance and Testing Center is located in room 103 of Bryan Hall and may be reached via phone (501) 968-0302, fax (501) 968-0375 or e-mail LATC@mail.atu.edu. For additional information, students may visit the center's website at http://latc.atu.edu.

Norman Career Services Center

The Norman Career Services Center provides online registration for students, alumni, and employers, as well as established web links to ethical employment boards. Registrants may access and provide information through www.erecruiting.com, including cover letters, resumes, company materials, campus recruiting schedules, information sessions, etc. The center hosts and maintains a computerized career interest inventory, called "Discover," located in residential housing, the Learning Assistance and Testing Center, the Graduate School, and its 211 Suite in the Doc Bryan Student Services Center. Services provided to **all** classifications of students and alumni include an extensive career library, company videos, career counseling, and resume critiquing. It also provides career workshops to classes, student groups and community organizations to ensure that Arkansas Tech University graduates are well informed, prepared for the job search, and availed of every opportunity to choose from professional alternatives. Career and part-time employment opportunities through business, industry, government, the health field and education are posted through the erecruiting website, as well as the electronic kiosk located in the entryway of the Doc Bryan Student Services Center.

The Arkansas Tech University Norman Career Services Center hosts recruiters from non-discriminatory employing agencies who conduct a variety of interviews each semester. Current contacts are maintained with local, national, and international employers seeking career professionals from every major. Career fairs are hosted each fall and spring for all students.

Additional information concerning Career Services may be obtained by calling (501) 968-0278, or writing to ATU, Norman Career Services Center, Doc Bryan Student Services Center, Office 211, Russellville, AR, 72801.

Student Exchange Opportunities

Arkansas Tech University De La Salle University Student Exchange

Students who wish to learn more about Philippine business, society, and culture may do so through the exchange program with De La Salle University (DLSU) in Manila, Philippines. DLSU offers undergraduate and graduate degree programs in a wide variety of areas including business, computer science, and humanities. Knowledge of Tagalog is not required since all classes are conducted in English. Students may apply for a semester (including summer) or more of study. Costs include Tech tuition and fees as well as transportation and living expenses (DLSU has dormitories). More information can be obtained from the International Student Services Office (501) 964-0832.

Arkansas Tech University Komazawa University Student Exchange

Students who wish to improve their Japanese language skills and learn more about Japanese society may do so by studying for a semester or a year at Komazawa University in Tokyo. Students must have completed two years of university work in the case of undergraduates and one year of graduate work in the case of graduates prior to enrollment in this program. Applicants must have good academic standing and a minimum of two years of Japanese language instruction. Students will be admitted in the first semester beginning in April or in the fall term which begins in September. Costs include Tech tuition fees (students are exempted from Komazawa fees) as well as transportation and living expenses. More information may be obtained from the International Student Services Office, Doc Bryan Student Services Center, Office 163 (phone 501-964-0832) or the Office of the Dean of Liberal and Fine Arts, Witherspoon Building 240 (phone 501-968-0274).

Arkansas Tech University University of Kansas Financial Aid Consortium Agreement

Tech has a financial aid agreement with the University of Kansas which allows Tech students to use their financial aid to participate in several of KU's study abroad programs. KU offers a variety of programs for a semester or academic year in Costa Rica, France, Germany, Spain, Denmark, Greece, and Russia. Summer institutes and programs are available in France, Germany, Italy, Brazil, Mexico, Spain, Russia, Japan, Great Britain, and Paraguay.

Arkansas Tech University University of Quebec Student Exchange

Tech offers students majoring or minoring in French the opportunity to improve their knowledge of the French language and to immerse themselves in the culture of French Canada through an exchange program with the University of Quebec. According to the exchange, Tech students may spend one semester or one full year at one of the campuses of the University of Quebec. While in Quebec, they will live either with a French-speaking family or in the university residence. Costs include Tech tuition fees (students are exempted from the Quebec fees) as well as transportation and living expenses. More information about the program may be obtained from the Foreign Languages and International Studies Department.

International Student Services

The International Student Services Office provides support services designed to enrich the cultural exchange between U.S. and international students. This office actively recruits international students in order to provide the Tech campus with a

diverse population from around the world.

The office offers a wide range of services for international students, including orientation, immigration updates, cross-cultural programming, and other support services necessary to ease the transition of international students into the U.S. culture.

Several established organizations receive support from the International Student Services Office. International Friends provides an opportunity for international students to share a relationship with U.S. host families through occasional meals and activities. The Association for Cultural Interaction promotes cross-cultural social and educational exchanges between international and U.S. college students. The office also currently helps coordinate events sponsored by the SGA Cultural Exchange Committee, which allows international students the opportunity to "experience" Arkansas.

The International Student Services Office also supports community activities which promote increased awareness of various cultures, such as Russellville's Global Fest. A speaker's bureau is available for community organizations and schools.

Additional information may be obtained by telephoning (501) 964-0832, faxing (501) 880-2039, or writing to Director of International Student Services, Doc Bryan Student Services Center, Office 163, Arkansas Tech University, Russellville, Arkansas 72801, U.S.A.

Student Financial Aid

The primary purpose of student financial aid at Tech is to provide assistance to students who, without aid, would be unable to attend college. Financial assistance consists of scholarships, grants, loans, and part-time employment, which may be offered to students singularly or in various combinations, depending upon the degree of need. In determining the extent of a student's need, the University must consider the financial support which may be expected from the income, assets, and other resources of the parents and the student. Aid awards by the University are considered supplementary to the efforts of the student's family in assisting their children with college expenses. All awards are administered by the Student Aid Office in accordance with the University's equal educational opportunity policy. Application forms for all types of aid may be obtained from the Student Aid Office in Doc Bryan Student Services Center, Office 117.

Cost of Attendance

A student’s cost of attendance (also called the financial aid budget) is the total of required tuition and fees and allowances for books and supplies, room and board, travel and personal expenses. Since the most recent federal regulations allow the cost of a computer to be added to the cost of attendance one time during the college career of a student, the cost of a computer and related accessories purchased no earlier than six months prior to enrollment will be added to the student’s cost of attendance budget upon receipt of documentation of a computer purchase. This will be a one time adjustment. No further adjustments will be made for upgrades or additional software at any time during the student’s career. Other adjustments to the cost of attendance allowed by federal regulations include study-abroad programs approved for academic credit, purchase of equipment required by all students in the same course of study, and reasonable expenses incurred related to a student’s disability. These adjustments may

result in additional financial aid if the student was not already receiving the maximum amount of every type of aid for which they were eligible. For more information, contact the Financial Aid Office: (501) 968-0399.

Scholarship Stacking Policy

Act 1180 of 1999 prohibits postsecondary institutions from using public funds in a student aid package which exceeds the cost of attendance at that institution. Arkansas Tech follows the Arkansas Department of Higher Education regulations by reducing scholarship amounts which cause awards to exceed cost of attendance. Scholarships awarded by Tech will be reduced before other scholarships. If a student has both academic and performance scholarships from Tech, the academic scholarship will be reduced first. If a Departmental Performance Scholarship has to be reduced, the supervisor will be informed of the reduction in hours of service. In the absence of direction from a private donor, all private funds will be split equally between fall and spring semesters. For more information on the scholarship stacking policy, contact the Financial Aid Office: (501) 968-0399.

Academic Scholarships

Academic scholarships will be awarded as applications are received; therefore, students should make application at an early date since only a limited number of these scholarships are available. Students may receive only one Tech funded academic scholarship in any semester. The amount of total funds received by each student will be contingent on the Arkansas Department of Higher Education Scholarship Stacking Policy, Arkansas Act 1180 of 1999.

Students who graduate from an Arkansas non-public non-accredited school or from a home school program must have a minimum composite ACT score of 24 and a 3.25 high school grade point average to be considered for academic scholarship.

Students who graduate from LeFlore or Sequoyah County in Oklahoma or Bowie County in Texas are considered in-state for fee purposes and are eligible to receive academic scholarships.

Board of Trustees Scholarship

This scholarship pays tuition, room (up to $950), board, and $500 stipend per semester for eight semesters for a student who qualifies as a National Merit Finalist, National Merit Semi-Finalist, Arkansas Governor's Distinguished Scholar, or Arkansas Governor's Scholar. The student must enroll in 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for the scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal of the scholarship during the sophomore, junior, and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirements in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation. The student must live in a residence hall to be eligible for room and board waiver. Failure to live in the residence hall will result in forfeiture of the room and board waiver for all subsequent semesters.

Presidential Scholarship

This scholarship covers tuition, room (up to $950), board, and $125 stipend per semester for eight semesters for a student who scores 30-36 ACT and has a 3.25 cumulative high school GPA. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal of the scholarship during the sophomore, junior, and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirements in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation. The student must live in a residence hall to be eligible for room and board waiver. Failure to live in the residence hall will result in forfeiture of the room and board waiver for all subsequent semesters.

University Honors Scholarship

This scholarship covers tuition, room (up to $950), board, academic fees, and $500 stipend per semester for eight semesters. The recipient must participate in University Honors curriculum requirements and maintain a minimum 3.25 grade point average based upon at least 12 hours each semester. Room and board waiver is contingent upon the recipient residing in a residence hall. Failure to live in the residence hall will result in forfeiture of the room and board waiver for all subsequent semesters. This scholarship is restricted to members of the University Honors program. For additional information on the University Honors scholarship, contact Dr. Jan Jenkins, Director of Honors, at 968-0456.

University Scholarship

This scholarship covers tuition, room (up to $950), and board per semester for eight semesters to a student who scores a 26-29 ACT and 3.25 cumulative high school GPA. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal for the scholarship during the sophomore, junior, and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirements in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation. The student must live in a residence hall to be eligible for room waiver. Failure to live in the residence hall will result in forfeiture of the room and board waiver for all subsequent semesters.

Dean's Scholarship

This scholarship awards tuition per semester for eight semesters for a student scoring 24-25 on the ACT and 3.25 cumulative high school GPA. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the

following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal of the scholarship during the sophomore, junior, and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirement in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation.

Academic Scholarship

This scholarship awards $500 per semester for four semesters for a student scoring 21-23 on the ACT and 3.25 cumulative high school GPA. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal of the scholarship during the sophomore year requires a 3.25 GPA on a minimum of 15 hours at the end of the fall semester. Failure to meet the renewal requirements in any semester will result in the forfeiture of the scholarship for all subsequent semesters. The scholarship must be used the fall semester following high school graduation.

Valedictorian/Salutatorian Scholarship

This scholarship pays tuition per semester for eight semesters for a student who is the number-one or number-two ranking student in his or her high school graduating class. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore year. Renewal of the scholarship during the sophomore, junior and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirements in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation.

Out-of-State Scholarship

A limited number of scholarships are awarded on a competitive basis to out-of-state students. Special consideration will be given to children of Tech alumni. To be eligible, a student must score between 24-36 on the ACT and have a minimum of a 3.25 cumulative high school GPA or rank number-one or number-two in his/her high school graduating class. This scholarship award varies based on the level of the student's ACT score. The student must enroll in a minimum of 15 hours during the fall semester of the freshman year and complete a minimum of 12 hours with a 3.00 GPA to be eligible for this scholarship the following spring semester. The student must enroll in a minimum of 15 hours for the spring semester and complete a total of 30 hours for the freshman year with a 3.00 GPA to be eligible for the scholarship for the sophomore

year. Renewal of the scholarship during the sophomore, junior, and senior years requires a 3.25 GPA each semester on a minimum of 15 hours per semester. Failure to meet the renewal requirement in any semester will result in the forfeiture of the scholarship for all subsequent semesters. This scholarship must be used the fall semester following high school graduation.

Transfer Scholarship

This competitive scholarship awards up to tuition per semester for four semesters to a student who has completed at least 30 for-credit hours from an Arkansas two-year public or private community or technical college with a 3.25 transfer GPA. A student must enroll in and complete 15 or more hours with a 3.25 GPA each semester to be eligible for renewal. Application deadline is June 1.

Phi Theta Kappa

Two tuition scholarships each fall semester will be given to members of Phi Theta Kappa. These transfer students must also have completed a minimum of 30 transferable hours with a minimum 3.5 grade point average to be eligible. A student must enroll in and complete 15 or more hours with a 3.25 GPA each semester to be eligible for renewal. These scholarships cover in-state tuition only. Application deadline is June 1.

Departmental Performance Scholarships

A limited number of scholarships are awarded yearly to students who show special aptitude which would be of service to the school. These students work eleven hours a week in their specific department for which they receive $1000 credit on their account. These scholarships are renewable for seven semesters if the student is not on academic or disciplinary probation, lives in campus housing, and receives the recommendation of the department head.

Music Performance Scholarships

The University will award, on an audition basis, a limited number of music performance scholarships for participation in major instrumental or choral organizations. The amount of the scholarship will be determined based on criteria established by the Music Department. The award will not be relinquished so long as satisfactory participation in the major music organization(s) continues and other conditions given below are met. The awards are renewable for the seven regular semesters immediately following enrollment, based on the recommendation of the Music Department head and the student's maintaining a cumulative grade point average of 2.25 or higher. No student is eligible for the award in a semester in which he or she is on academic or disciplinary probation. Once lost, the scholarship may be regained by raising the grade point average to the required level or by removal from academic or disciplinary probation and upon recommendation of the head of the Music Department.

Senior Service Fellowships

Fellowships in the various schools of the University are open to a limited number of outstanding advanced students. These service fellowships are awarded at the discretion of school committees when the caliber of the applicant justifies such assistance. Candidates for the fellowship must have earned 90 semester hours of credit, have a minimum grade point average of 3.00 on all work, and be enrolled in a

minimum of 12 hours for the semester(s) for which the fellowship is granted. Any deviation or exception to this policy must be approved by the Office of Academic Affairs. Students who would like to be considered for a Senior Service Fellowship must make written application by April 1 to the appropriate dean.

Native American Out-of-State Waiver

Arkansas Tech University offers in-state tuition rates to Native American students in other states belonging to tribes which formerly lived in Arkansas, before relocation, and whose names are on the rolls of tribal headquarters. Tribes thus identified include the Caddo, Cherokee, Chickasaw, Choctaw, Creek (Muskogee), Delaware, Kickapoo, Osage, Quapaw, Shawnee, and Tunica. Students who qualify for in-state tuition for fee purposes may apply for freshman academic scholarship. For more information contact the Office of Admissions at (800) 582-6953.

Arkansas Tech University Foundation Scholarships

The scholarships listed below have been established by the alumni and friends of Arkansas Tech University in order to afford current students the ability to pursue their goals of earning a degree in higher education. Without the support of these dedicated individuals, the majority of these scholarships would not be available.

Unless otherwise indicated, scholarship applications should be submitted to the Admissions Office by March 15, and will be awarded by the Student Aid Committee. Applications may be obtained by writing to the Admissions Office or the Financial Aid Office unless otherwise specified. Priority will be given to students who specify the Foundation scholarships for which they would like to be considered. A Federal Financial Aid Application must be on file in the Financial Aid Office to be considered for these scholarships.

Accounting Club Scholarships

Several fee and book scholarships are awarded each year to accounting majors. The scholarships are provided by contributions made to the Accounting Club by alumni of the Accounting Department. Senior accounting majors and Accounting Department faculty choose the recipients based on need, scholarship, and potential in the accounting profession. Submit applications to the head of the Accounting Department.

Susan Adams Memorial Scholarship

The family and friends of Susan Adams have established a scholarship in her memory. The amount of the scholarship will be credited toward tuition for the recipient. Although any worthy student is eligible to receive the scholarship, preference in selection will be given to out-of-state students who are children of Tech graduates.

Arkansas Broadcasters Association Scholarship

This scholarship will be awarded annually to a student who carries a minimum cumulative grade point average of 3.0 and is majoring in Journalism with a emphasis in Broadcasting. Preference will be given to an upper-level student and will have the opportunity of renewal the following year. The student's character, overall performance and promise in the broadcasting field as well as financial need will be considered when making this award. Applications should be made to the head of the Department of Speech, Theater and Journalism.

Athletic Scholarships

The maximum number and maximum value of such scholarships will be determined by the constitution and by-laws of the NCAA Gulf South Conference. Applicants should contact the Arkansas Tech University Athletic Director.

Nell Teeter Balkman Nursing Scholarship

This partial tuition scholarship will be awarded to a junior or senior nursing student from Arkansas who demonstrates potential for nursing leadership such as was exemplified by Nell Teeter Balkman. Applicants must have at least a "C" average and must submit a letter of application and two letters of recommendation from Arkansas Tech University Nursing Department faculty. This scholarship is renewable provided that the student receives the recommendation of the Nursing Department and continues to meet the scholarship criteria. Financial need will be a consideration in making this award. Applications should be submitted to the Head of the Nursing Department.

Col. Alton F. Balkman Athletic Scholarship

This partial-tuition scholarship will be awarded to a student from Arkansas who is a member of the Tech basketball or football team and demonstrates potential for service to country such as was exemplified by Colonel Alton F. Balkman. Applicants must have at least a "C" average and must submit a letter of application and two letters of recommendation from Arkansas Tech University Athletic Department faculty. The Arkansas Tech Student Aid Committee will select the recipient on the recommendation of the Athletic Department. Financial need will be a consideration when making this award. This scholarship is renewable provided that the student receives the recommendation of the Athletic Department and continues to meet the scholarship criteria.

Sybil W. Bates Engineering Scholarship

Awarded to an incoming freshman majoring in Engineering, this scholarship is decided by a committee from the Arkansas Tech University Engineering Department. To be eligible for this scholarship, a student must have an ACT composite score of 26 and a 3.5 in core classes from high school. This scholarship is for the freshman year only and is not renewable for subsequent years. Applications should be directed to the head of the Engineering Department.

Janet Beck Memorial Scholarship

This memorial scholarship has been established by the parents and friends of Janet Beck in honor of her many accomplishments. Preference will be given first to graduates of Nemo Vista High School and then to graduates of Perry or Conway Counties. Two letters of recommendation from high school teachers and/or counselors should accompany the scholarship application. The scholarship amount will be determined each year as funds are available. Applications should be submitted to the Development Office, Administration Building room 212.

Bridenthal Choir Scholarship

This scholarship is named for Dorothy Bridenthal Bean and her twin sister, Deloris Bridenthal Prestridge, both of whom attended Arkansas Tech from 1940 until their graduation in 1942. While this award is designed for students whose studies concentrate on choir in their music education, a student who is majoring in choir or choral music is preferred. Each applicant must audition for the scholarship. The

recipient must be in good academic standing and shall be chosen by a committee composed of three members of the Arkansas Tech University Music Department. This scholarship will be awarded each semester that funds are sufficient. Interested students should contact the head of the Music Department.

Bridenthal Piano Scholarship

This scholarship is named for Dorothy Bridenthal Bean and her twin sister, Deloris Bridenthal Prestridge, both of whom attended Arkansas Tech from 1940 until their graduation in 1942. While this award is designed for students whose studies concentrate on piano in their music education, a student who is majoring in piano is preferred. Each applicant must audition for the scholarship. The recipient must be in good academic standing and shall be chosen by a committee composed of three members of the Arkansas Tech University Music Department. This scholarship will be awarded each semester that funds are sufficient. Students interested in applying should contact the head of the Music Department.

Brooks Family Scholarship

The Brooks Family Scholarship, established by Dr. Robert Autry Brooks, is to be awarded each year that funds are sufficient. Preference will be given to a student focusing his or her studies in the Arts and Sciences including, but not limited to English, Literature, and History. The student should be an Arkansas resident possessing academic and/or leadership potential and in good academic standing with a cumulative grade point average of 3.0 or above. Application should be made to the head of the School of Liberal and Fine Arts.

Elmo Browning Scholarship

To be considered for this scholarship, a student must graduate from either Augusta High School (Augusta, Arkansas) or McCrory High School (McCrory, Arkansas) and attend Arkansas Tech University. The original recipient will retain the scholarship throughout their academic career at Arkansas Tech University provided that they complete a minimum of twelve credit hours per semester or twenty-four semester hours for the fall and spring semesters combined. Additionally, students must maintain a cumulative grade point average of 2.0. If a student's cumulative grade point is below 2.0 for the fall semester, they will be allowed to receive the scholarship for one additional semester to allow them to bring up their cumulative grade point average up to 2.0.

Fay Bullock Social Science and Philosophy Scholarship

A scholarship awarded each semester to a student who is majoring, or one who intends to major, in the Department of Social Sciences and Philosophy. Academic achievement, need, and relevant extracurricular activities will be considered in making the award. The recipient will be selected by the department's faculty. Application should be made to the head of the Department of Social Science and Philosophy.

Business and Economics Faculty Book Scholarships

Several book scholarships are awarded each year to full-time senior students pursuing any of the business and economics majors. The scholarships, presented in recognition of outstanding academic achievement, are funded by contributions from the Business and Economics Department faculty, which also selects the recipients. Interested students should contact the head of the Business and Economics

Department.

Markey Butterworth Scholarship

An endowed scholarship in memory of Markey Butterworth is given annually to an out-of-state student majoring in Fisheries and Wildlife Biology. The scholarship will be awarded by the Student Aid Committee.

Reuben Dee Caudle Scholarship

A partial-tuition scholarship will be provided for a student majoring in one of the physical science fields. The recipient must demonstrate a financial need and must meet and maintain satisfactory scholastic requirements. Preference will be given to Arkansas residents and those who have prior military service. This scholarship is to be re-awarded to the initial freshman recipient each of his/her subsequent three years while at Tech provided he/she continues to major in Physical Sciences and maintains good academic standing. Applications should be submitted to the head of the Physical and Life Sciences Department.

Judge J. E. Chambers Scholarship

Proceeds from an endowment established by the family of the late Judge John E. Chambers provides scholarships for outstanding applicants from Danville, Fourche Valley, Western Yell County or Dardanelle High School. Applications with at least two supporting letters of recommendation must be received by the Student Aid Office by April 1 each year. Academic promise and service to school and community will be heavily considered in determining the recipient.

C.L. Chiang and C.C. Yang Chemistry Scholarship

An endowed scholarship established by Mr. C.L. Chiang of Singapore in honor of Dr. C.C. Yang, former Professor of Chemistry. The scholarship is awarded to an incoming freshman majoring in chemistry. The requirements for this award are a high school GPA of 3.0 or greater and a composite ACT score of 24 or greater. Applications should be made to the head of the Physical Sciences Department. This scholarship is renewable by request if the awardee makes satisfactory progress toward an ACS-accredited degree in chemistry.

John Clement/First State Bank Scholarship Fund

Established by First State Bank, this scholarship honors John Clement for his many years of service to the River Valley community. Scholarship applicants must have the recommendation of their high school counselor as being qualified to complete a higher education curriculum. Additionally, applicants must have demonstrated financial need and not have access to other scholarships or grants which will completely pay their education costs. Applications should be submitted to the Development Office, Administration Building room 212. Recipients will be chosen by the First State Bank Scholarship Committee.

Dana Coffman Journalism Scholarship

This partial-tuition scholarship has been established in memory of Dana Coffman, a former journalism student at Arkansas Tech University. This award will be decided by Journalism Department faculty with preference given to a female student majoring in the field of Journalism. Academic achievement and financial need will be reviewed before making the award. Application should be made through the Journalism Department.

Rip Collins Memorial Scholarship

Established by the Friends of the Little Red River to honor Mr. Rip Collins, the scholarship shall be used to make awards to full-time student(s) attending Arkansas Tech University. A recipient will be chosen annually and receive partial tuition for both the fall and spring semester of that academic year. Selection process will begin in the spring after recommendations are made by fisheries professors at Arkansas Tech. Awards will be granted by a committee made up of members of the Friends of the Little Red River after reviewing applications and letters from the applicants expressing their thoughts, beliefs, and future plans concerning fisheries management. Preference will be given to a sophomore or junior fisheries student in good standing who is interested in either cold water fisheries biology or management or stream/riverine fisheries biology or management. Recipient will attend Friends of the Little Red River fall banquet for recognition. Application should be made through the Biology Department.

G. M. and Ruby Cook Business Scholarship

An endowed scholarship will be awarded annually to a business major. Applications should be made to the head of the Business Department.

Dale Corley Memorial Scholarship

Friends and former students have established an endowed scholarship fund to commemorate the many years of service the late Mr. Corley rendered as professor and chairman of the Department of Accounting. Interest from the fund is awarded once annually to a senior accounting major. Selection of the recipient is made by the Department of Accounting each spring. Submit scholarship applications to the head of the Department of Accounting.

Alfred & Marge Crabaugh Scholarship Program

Established through the benevolence of Alfred J. & Marge W. Crabaugh, both of whom were prominent figures in the history of Arkansas Tech University and the Russellville community. This renewable scholarship will be awarded to outstanding full-time student(s) who have an ACT score of 21 or above, demonstrate leadership skills, and excel in Speech, Journalism or Communication. To be considered for this award, in addition to the above stated criteria, entering freshmen must submit two letters of recommendation from teachers, a scholarship application and high school transcripts. The scholarship can be renewed with the original recipient provided he/she continues to meet the criteria, maintains a cumulative 3.00 grade point average, and has written renewal recommendations from two Arkansas Tech University faculty members in their field of study. Renewal recommendations must be made to the Arkansas Tech Development Office. Scholarship recipients will receive an award for tuition, fees and books and will be known as “Crabaugh Scholars.” Financial need will be considered when making these awards. Application should be made to the Arkansas Tech Development Office; recipients will be selected by the Crabaugh Scholarship Committee.

Dames Club Scholarship

The Dames Club, which is composed of women faculty and administrative staff members and the wives of faculty and administrative staff members, annually awards a scholarship to a deserving woman who has completed a minimum of 36 credit hours but not more than 90 credit hours at Arkansas Tech. The scholarship pays the tuition

and activity fees for the semester following the selection. To be eligible, a recipient must have a cumulative grade point average of not less than 3.0, must demonstrate need for financial assistance, and must have a record of cooperation with faculty, staff, and other students. Interested students must submit a letter of application which includes address and phone number, letters of recommendation from two faculty members, and an official transcript from the Registrar's Office. Applications should be submitted to the Development Office, Room 212 Administration Building by March 1st. Recipients will be chosen by the Award Committee of the Dames Club.

Bill Donnell, Jr., Memorial Art Scholarship

The family and friends of Bill Donnell, a 1993 Tech graduate in graphic design, have established a tuition scholarship as a tribute to his memory. Each year the funds from the Bill Donnell, Jr., Memorial Golf Tournament hosted by Chamberlyne Country Club will be contributed to the scholarship account. This tuition scholarship will be awarded each fall term to an entering freshman or current student who is majoring in art. The recipient will be chosen by the Student Aid Committee and approved by the Donnell family. Preference will be given to students who demonstrate financial need, who are residents of Yell County, and/or who plan a study emphasis in graphic design.

Deward and Anne Dopson Scholarship

A tuition scholarship awarded from funds contributed by Coach Dopson's former players, managers, and friends. The scholarship goes to a former student-athlete in the last semester or year of his or her undergraduate degree and is selected by the Vice President of Student Services. Past service to Tech will be a strong factor for selection. Applications should be submitted to the Office of the Vice President of Student Services.

Gerald Edgar Scholarship

A performance scholarship paying a semester's tuition is awarded each spring in honor of Gerald Edgar who was News Bureau Director, advisor of student publications, and journalism professor for twenty-nine years at Arkansas Tech University. It is to be awarded to a student who shows ability in and dedication to publications work. Financial need will be considered. The student will be required to work ten hours per week on student publications.

Elton and Deanna Epley Family Scholarship

This scholarship will be awarded to an incoming student each year that funds are sufficient. The award will cover tuition and fees for one year and one-half the cost of on-campus room and board. Preference will be given to a student who has demonstrated financial need and is a graduate of Green Forest, Arkansas, Public Schools. A personal interview will be a part of the selection process. Applicants will also provide two letters of recommendation from high school counselors, teachers or employers. The committee will consider the student's high school academic record, including both grades and standardized test scores. The recipient of this scholarship will be chosen by a committee selected by the Director of Development upon review of the submitted scholarship applications. Interested students should submit a scholarship application and all necessary documents to the Office of Development, Administration Building room 212.

Lawrence M. Evans Memorial Political Science Scholarship

A memorial scholarship established by Dr. Larry Evans, his family, and his friends for a sophomore, junior, or senior majoring in History and Political Science. Preference will be given to those emphasizing Political Science. Academic achievement and need will be considered in making the award. The recipient will be selected by the faculty of the department of Social Sciences and Philosophy.

Gene Farmer Memorial Award

A grant is awarded to an Arkansas high school editor who plans to specialize in either journalism or political science at Arkansas Tech University. This award, to honor and encourage a student of outstanding ability, will be made to the high school editor whose academic and journalistic accomplishments indicate the greatest potential for distinguished service in either field. The award, from the income of the Gene Farmer Memorial Endowment, is in memory of one of Arkansas Tech University's most distinguished graduates, who from a beginning as editor of Tech's student newspaper, achieved national and international prominence as a journalist. Mr. Farmer authored several books and worked for many years as a senior editor for Life Magazine.

Laura Ferguson Computer Science Scholarship

This endowed scholarship was established by Laura Ferguson, Arkansas Tech University class of 1934, who worked in the computer industry for the majority of her career. This scholarship covers full tuition for one year for an upper level student enrolled in the Computer Science program with preference given to residents of Pope County. Application should be made to the head of the Computer Sciences Department.

First United Methodist Church Scholarship

This scholarship has been established by the First United Methodist Church in Russellville to assist Methodist students who are nursing, medical assistant, health information management, or medical technology majors at Arkansas Tech. Students majoring in nursing will receive first consideration for the award which will be made by the Arkansas Tech Student Aid Committee. Students should be recommended by their home church pastor and the scholarship is renewable.

Maude Moore Geurian Memorial Scholarship

This scholarship has been established to honor Maude Moore Guerian for her many years of dedication to Arkansas Tech University and devotion to her students. Applicants for this scholarship must have declared Math as a major course of study, maintain a minimum cumulative grade point average of 3.0, demonstrate financial need, and have earned a minimum of 30 credit hours. Scholarship recipients will be chosen by a committee composed of the Head of the Math Department and Math Department faculty members. Applications should be submitted to the Head of the Math Department.

GTE Telephone Operations

A tuition scholarship is awarded each year to a Tech student. This scholarship is based both on need and academic ability. The scholarship will be awarded to a student majoring in engineering or a related field and whose home is in the area serviced by Central Area GTE in Arkansas.

William C. (Bill) & Barbara Gund Scholarship

Students majoring in English with a junior or senior standing are eligible for this partial-tuition scholarship provided that they maintain a cumulative grade point average of at least 3.0 and follow all established criteria. Selection will be made by a committee from the English Department with preference given to non-traditional students. Application should be made through the English Department.

Francis Gwaltney Memorial Scholarship

An endowed scholarship available to any major awarded each semester in memory of Francis Gwaltney, former author and member of the English and creative writing faculty. Applicants must submit a sample of their short fiction to the Department of English one week before the end of the semester to be considered for the next semester's award.

Burl Harris Memorial Scholarship

Mr. and Mrs. John G. Harris have established this scholarship in honor of Burl Harris, a long-time practicing Public Accountant and businessman in Russellville. During most of his life, he was actively involved in industrial development efforts for the Russellville area. Mr. Harris served on the Arkansas Tech University Foundation Board of Directors until his death in 1990. He was a dedicated supporter of the University as a whole and of the Department of Accounting in particular. This scholarship will be awarded to a junior- or senior-level accounting major each year that funds are available. Applications should be made to the head of the Arkansas Tech University Accounting Department.

Homestead Tractor Agriculture Scholarship Fund

To be considered for this scholarship, applicants must be from Pope County, Arkansas, and majoring in Agriculture Business at Arkansas Tech. Applications should be submitted to the Head of the Agriculture Business Department.

Jasper Vernon Howard Scholarship

An endowed scholarship in memory of Jasper Vernon Howard will be awarded annually to a student in the School of Business. The recipient must demonstrate a financial need and must meet and maintain satisfactory scholastic requirements. This scholarship will be awarded by the Student Aid Committee.

Interfraternity Council (IFC) Scholarship

The IFC Scholarship is awarded each fall semester to an outstanding Tech fraternity member with the classification of sophomore or junior. The scholarship will be announced in April of each year. Interested students should contact the Vice President of Student Services.

Opal James Memorial Scholarship

The family and friends of Opal James have established an endowed scholarship in memory of Mr. James, a park ranger who was killed while on duty in 1977. The scholarship is awarded annually to a student in Recreation and Park Administration or Fisheries and Wildlife Biology. Scholarship and future potential for service will be considered by the Student Aid Committee in making the award.

Jackie Knight Memorial Scholarship

A scholarship awarded annually to an outstanding and deserving senior-to-be who is majoring in accounting. The recipient will be selected by the head of the Accounting Department. Grade point and financial need will be considered in making

the selection. This scholarship was established by the family and friends of Jackie Knight, former Vice-President for Administration and Finance at Tech. Applications should be submitted to the head of the Accounting Department.

Little Rock Grain Exchange Scholarship

To be considered for this scholarship, students must have declared a major in Agriculture or Agriculture Business. Freshmen students must rank in the upper half of their Arkansas high school graduation class and possess ACT or SAT test scores that exceed the state average. Additionally, applicants must have two or more positive recommendations from their high school principal, counselor or teachers. Sophomore students must have two or more positive recommendations from their university or college teacher and have a 3.0 cumulative grade point average. Financial need will be considered although not determinative. Scholarships are renewable each semester up to eight semesters assuming the student takes a full academic load of 15 hours per semester and maintains a cumulative grade point average of 3.00. Applications should be made to the head of the Agriculture Department.

W. H. "Bill" Martin Scholarship

This tuition and fees scholarship will be granted each year that sufficient funds are available. Preference will be given to a junior or senior student who demonstrates financial need, has an academic track and career interest in the newspaper industry, and has previous experience on a newspaper staff or with the media. Upon selection, the recipient must maintain at least a 3.0 grade point average or must appeal for continued support. Scholarship applications and application for continued support must be submitted to the Development Office by July 15. Applicants will not be eligible to receive this scholarship if they are current full-time employees of The Courier.

Bill Martin Family Book Award

This award will be granted by a committee each year to the recipient of the W. H. "Bill" Martin Scholarship.

Massie-Mobley Modern Foreign Language Scholarship

A full-tuition scholarship for an upperclassman majoring in foreign language. The recipient will be selected by the Department of Foreign Languages and International Studies.

Wilson Matthews Distinguished Scholar Athlete Award

This fund was created by the Ross Pendergraft family in recognition of the contributions that Coach Wilson Matthews has made as a distinguished graduate of Arkansas Tech University. This scholarship will be awarded to junior- or senior-level students who participate in team sports. These scholarships are renewable annually based on the student-athlete's academic and athletic standing and with continued recommendation of the nominating coach and selection by the Matthews Scholarship Committee. Criteria for receiving this scholarship are: nomination by a coach and selection by the Matthews Scholarship Committee; junior standing or above; grade point average of 3.00; preferably from a rural area; and exemplary credentials in academics, athletics, and leadership skills in school or community. Selected students must submit a resume and three letters of reference representing the areas of academics, athletics and leadership. Consideration will be given for additional financial

assistance being received and to those students who meet the criteria with an emphasis on football. Application should be made through the Athletic Department.

Truman McEver Memorial

A scholarship for an entering freshman who is majoring in an area of Physical and Life Sciences. The recipient is chosen by members of the Physical and Life Science Department; academic ability and financial need are considered. Submit scholarship application to the head of the Physical and Life Science Department.

Xzin McNeal Scholarship

Scholarships are awarded annually to students in the Department of Agriculture. Students are selected by need and merit. Selection is by the Agriculture Department and a person named by Mr. McNeal. Scholarship amounts vary from one half tuition to full tuition. Students must maintain a 2.50 cumulative grade point average. Interested students should submit a scholarship application to the head of the Department of Agriculture.

P. K. Merrill Memorial Scholarship

This scholarship is given to a junior or senior majoring in sociology or history.

Mitchell-Keathley Scholarship

Established in honor of Mr. and Mrs. Bobby Keathley and Mr. Boss Mitchell, this scholarship will benefit graduates of Danville High School. To be eligible for this scholarship, the applicant must attend Danville High School (Danville, AR) for the last four semesters prior to graduation and be accepted for admission to Arkansas Tech University. Additionally, high school grade point average, ACT score, leadership roles in school and community, and financial need will be considered. The principal and counselor at Danville High School will be included in the selection committee. Submit application to the Counselor's Office at Danville High School.

Dwight M. Moore Scholarship

A book scholarship is awarded in the spring semester to a student interested in and having potential in the field of botany. Selection is made in the fall semester by members of the Biological Sciences Department. The scholarship was established by the late Dr. Moore, one-time head of the department, and by his wife Clemmie, a graduate of the department. Students interested in being considered for this scholarship should submit a scholarship application to the head of the Biological Sciences Department.

Van & Marilyn Moores Scholarship

This partial-tuition general scholarship will be awarded annually by the Student Aid Committee. Most awards are made to incoming freshmen.

Bert and Annette Mullens Scholarship

This partial-tuition scholarship is awarded to an incoming freshman majoring in business. Awards will be made by the Student Aid Committee each year that funds are available.

Non-Traditional Student Scholarship Fund

A scholarship awarded each spring semester that funds are sufficient, with preference given to a non-traditional student who is 23 years or older and has a minimum cumulative grade point average of 3.0. Selection will be made by the Director

of Development. Submit applications to the Development Office, Administration Building room 212.

John & Joie Nutt Scholarship

This scholarship has been established to benefit students who are enrolled in either Agriculture or Agriculture Business at Arkansas Tech University, maintain an appropriate cumulative grade point level, and have a class standing of sophomore of higher. This annual award will cover tuition, fees, and a stipend for textbooks. Recipients will be chosen by a committee made up of faculty members of the Agriculture Department. Interested students should turn in a scholarship application to the head of the Agriculture Department.

Rexann Oller English/ Creative Writing Scholarship

Two endowed scholarships awarded each year to deserving English or creative writing majors. Recipients, who must be English or creative writing majors in good academic standing, will be selected by the English Department Head.

Rexann Oller Music Scholarship

An endowed scholarship awarded each year to a deserving student in music. The recipient, who must be in good academic standing, will be selected by the Music Department Head.

Rexann Oller International Studies Scholarship

The Rexann Oller International Studies Scholarship will be awarded each year to a student who shows academic achievement in international affairs and/or strong background and interest in international relations. This is a full-tuition and fees scholarship and is open to all Arkansas Tech undergraduate and graduate students who have a minimum GPA of 3.0. Preference will be given to students with demonstrated financial need. Recipients of other tuition scholarships are not eligible to apply. Application deadline is November 1. Please contact the Office of International Student Services for full application requirements.

B. G. and Anita Owen Textbook Scholarship

A book scholarship awarded to a student with junior standing was initiated by B.G. Owen, Associate Professor of Biology. Following the expressed wishes of their daughter, friends may contribute funds to perpetuate this scholarship, which is awarded by a committee from the biology department according to criteria determined by the late Professor Owen. Application should be made to the head of the Biology Department.

Anita Page Memorial Scholarship

This scholarship is awarded by the Student Aid Committee. The recipient must work eight hours per week in a department related to the student's major.

Tate Page Family Scholarship

The family of the late Dr. Tate Page has endowed a scholarship in his memory which will be awarded annually by the Student Aid Committee.

Tate C. "Piney" Page Memorial Scholarship

An endowed graduate athletic scholarship in memory of Dr. Page has been established through contributions by the Russellville Kiwanis Club. The recipient will be chosen by the Arkansas Tech Athletic Director.

Ross Pendergraft Scholarship

Four renewable scholarships are to be awarded to full-time undergraduate students who have demonstrated financial need and are majoring in computer science, accounting, or business/economics/finance-one scholarship from computer science, one from business and two from accounting. These scholarships will each cover the cost of tuition and fees. Each scholarship will be renewed with the original recipient provided he or she has a grade point average of not less than 2.5 for the fall semester and a cumulative grade point average of at least 3.0 at the end of each spring semester. Application should be made to the above mentioned departments.

William C. and Myonia Pinson Instrumental Music Scholarship

A tuition scholarship will be provided each year for an instrumental music major to be selected by a music faculty committee. Students interested in being considered for this scholarship should submit a scholarship application to the head of the Music Department.

Jim Price Memorial Scholarship

Friends and members of the Church of Christ have established an endowed scholarship fund in memory of Jim Price to assist students who are members of the Church of Christ. The scholarship is awarded on a semester basis and can be renewed for one additional semester. To be eligible a recipient must have completed 24 or more hours at Arkansas Tech with a "C" average or better. The scholarship is awarded by the Jim Price Memorial Scholarship Fund Board of Directors which can be reached via the Church of Christ Student Center in Russellville. Students should be recommended by their home congregation.

Professional Artists and Craftsmen of Arkansas Scholarship

This annual scholarship will be awarded to a returning student to partially cover the cost of tuition or books. Application should be made to the Head of the Art Department.

Quail Unlimited/Jim Ed McGee Scholarship

A scholarship awarded each year by the Russellville Chapter of Quail Unlimited in memory of Dr. Jim Ed McGee, an outstanding educator and sportsman. The scholarship is awarded annually to a junior or senior student in Fisheries and Wildlife Biology based on scholarship and professional potential. Minimum qualifications include a 3.0 grade point average, 60 earned hours of credit, and home residence in Pope County or an immediately adjacent county. Application deadline is December 1; selections will be made in January based on the recommendations of the faculty in Fisheries and Wildlife Biology. Submit scholarship applications to the head of Fisheries and Wildlife Biology.

Lillian Massie Reed Modern Foreign Language Scholarship

A scholarship awarded annually to a student majoring in foreign language. The recipient will be selected by the Department of Foreign Languages and International Studies.

Lambert Resimont Memorial Scholarship

An endowed athletic scholarship to be awarded annually. Students interested in applying should contact the Arkansas Tech Athletic Director.

Ron and Donna Reynolds Scholarship

A scholarship awarded each fall semester that funds are available to a freshman art major carrying twelve or more hours. The student receiving the scholarship will be expected to work in the Art Department six hours a week. Selection is made by presentation of a portfolio and interview. Selection is made before the fall semester, based on the recommendation of the Art Department head. Interested students should submit an application to the head of the Art Department by June 1.

Reeves Ritchie Scholarship

Arkansas Power and Light Company will award an annual scholarship in the amount of $1,500 to a senior majoring in fisheries and wildlife biology or recreation and parks administration. Selection will be made by the Student Aid Committee and preference will be given to a student who plans to reside in Arkansas after graduation. Mr. Ritchie, now retired, was a long-time president of AP&L.

Russellville Kiwanis Joe Ray Scholarship

This endowed scholarship was established in memory of long-time State Senator Joe Ray of Havana. Applicants may be prospective or returning students. Prospects must have demonstrated their academic potential by scoring a minimum of 21 on the ACT examination or maintaining a minimum cumulative college grade point average of 2.5, demonstrated a financial need, and submitted a completed application form and supporting documentation to the Development Office by January 15.

Russellville Noon Lions Club Scholarship

A scholarship will be awarded to a local student who exhibits academic ability, leadership, and financial need. The recipient will be selected by the Student Aid Committee each spring.

Russellville Rotary Club Scholarship

A scholarship is awarded each year to a Pope County student by the Russellville Rotary Club. Applications may be made each summer to the Rotary Club through any of its members.

Mary McDonald Shinn Scholarship

An annual partial-tuition scholarship awarded to a vocal music major chosen by a committee made up of the Arkansas Tech Music Department faculty. Application should be made through the Music Department.

Mary Teresa Shinn Scholarship

A scholarship given in memory of Mary Teresa Shinn. This scholarship is awarded by the Student Aid Committee.

James R. Staggs Elementary Education Scholarship Fund

An annual scholarship will be awarded to a student majoring in Elementary Education each year that funds are sufficient. To be eligible for this scholarship, students must have earned at least 60 credit hours, have a cumulative grade point average of 3.0 or higher, and be a graduate of the Russellville, Fort Smith or London, Arkansas school districts. Recipients will be chosen by the chair of the Department of Curriculum and Instruction and an appointed committee. Applications should be submitted to the chair of the Department of Curriculum and Instruction.

Carol Stewart Stark Memorial Scholarship Fund

Scholarships from this account will be awarded by a committee of Music Department faculty each year that funds are sufficient. Preference will be given to an

undergraduate music major who demonstrates financial need with first priority to be given to a married or single parent student. If no one meets this qualification in any given year then any undergraduate music student demonstrating need will be considered. Scholarship applications should be submitted to the head of the Music Department.

Hazel Thrasher Memorial Scholarship Fund

Scholarship awarded to nursing majors based on need and the potential to meet the requirements of a professional nurse as determined by the Department of Nursing. Students interested in being considered for this scholarship should direct inquiries to the head of the Department of Nursing.

John E. Tucker Memorial Scholarship

An endowed athletic scholarship. Applications should be made to the Athletic Director.

Mary D. Turner Music Scholarship

An endowed scholarship will be awarded annually to a music major in honor of Mary D. Turner. Applications should be made to the head of the Music Department.

Virgil Alvin Turner Book Scholarship

A book scholarship established by Mr. and Mrs. Raymond B. Stroud which is awarded for the fall semester of the sophomore year to a major in chemistry. Recipients should be dedicated to obtaining a degree in chemistry and demonstrate this through scholarship attainments. Selection will be made by the full-time chemistry faculty. Scholarship inquiries should be directed to the head of the Chemistry Department.

The Mary Elizabeth Ragland Urton Memorial Scholarship Award

An endowed award given each year to a deserving female student who has maintained a minimum grade point average of 2.5; practices her leadership skills; and exemplifies ethical and moral values. Scholarships and awards will be granted by a committee each year that funds are sufficient. Scholarship applications should be submitted to the Development Office, Administration Building room 212.

Alfred and Martha Brownlee Vance Scholarship

An annual scholarship for an incoming freshman. Preference will be given to a Pope County resident. Awards will be made by the Student Aid Committee.

Vance Family Scholarship

A scholarship awarded annually by the Student Aid Committee.

Waste Management Accounting Book Scholarship Fund

This scholarship award will be granted annually as funds are sufficient. Preference will be given to an accounting major who has achieved junior or senior status. Applications should be submitted to the Head of the Accounting Department.

Melvern Watson Scholarship

Awards will be made by a committee comprised of faculty members from the Agriculture Department each year that funds are available. This scholarship will be awarded to a student majoring in Agriculture or Agriculture Business with preference given to current or transfer students, especially those who have achieved junior status.

Financial need will be a consideration and students who receive the scholarship may re-apply for the scholarship for subsequent years. Applications should be turned in to the head of the Agriculture Department.

Eugene and Hazel Weir Educational Trust

This scholarship was established to provide scholarships to qualified Arkansas Tech University students from Pope County, Arkansas. Mrs. Weir graduated from Atkins High School, attended Arkansas Tech and then went on to teach in Pope County schools for 48 years, including many years in Russellville. The scholarship amount will be determined each year as funds are available and can be applied for through the Development Office.

Dr. Charles and Joyce Wilkins Nursing Scholarship

To award excellence, this full-tuition senior honors scholarship is awarded to a full- or part-time nursing student who has the highest grade point average prior to entering the fall semester of the Tech Nursing program senior year. The recipient will be chosen by Tech Nursing Department faculty. Application should be made to the Nursing Department.

Penny L. Wheeler Memorial Scholarship

A scholarship is awarded annually by the Student Aid Committee to the most deserving nursing student based upon high school record, need, and test scores.

Robert Hays and Martha Williams Scholarship

The Robert Hays and Martha Williams tuition scholarship is awarded annually to an incoming freshman. The recipient must be a high school graduate from either Pope, Crawford or Yell counties. The student must have maintained a “B” average through high school, participated in school activities, possess the quality of good citizenship and have financial need. Recipients are chosen by the Student Aid Committee.

Teresa Williams Memorial Endowment Scholarship Fund

Endowed scholarships to Arkansas Tech will be awarded to qualified graduates of Benton, Arkansas, High School. Applicants will be chosen by the Student Aid Committee.

Gene Witherspoon Memorial Scholarship

A scholarship awarded annually to an instrumental music major by the Arkansas Tech Band Alumni in memory of Gene Witherspoon, director of bands at Tech from 1950 to 1970. Students who are interested in being considered for this scholarship should submit a scholarship application to the head of the Arkansas Tech Music Department.

Hallie Belle Witherspoon Memorial Scholarship

A scholarship is awarded annually to an instrumental music major by the Arkansas Tech Band Alumni in memory of Hallie Belle Witherspoon. Direct scholarship applications to the head of the Music Department.

Yell County Medical Society Scholarship

A $500 scholarship awarded each spring semester by the Yell County Medical Society to a student from Yell County majoring in Nursing. Applications should be sent to the head of the Arkansas Tech University Nursing Department by December 1 each year. Selection will be based on need and academic achievement as determined by the Nursing Department.

Yell County Scholarship

This partial-tuition scholarship was established by an anonymous donor and is to be awarded to deserving students from Yell County. Awards will be made by the Student Aid Committee.

Privately Supported Scholarships

Allied Poultry Industries Scholarship

Scholarships are awarded to students in the Department of Agriculture. These scholarships are awarded to promote entrance into this vast food-producing industry. Trained, high-quality college graduates are needed for jobs as administrators, production managers, and sales-service representatives. The selection is made by the Department of Agriculture of Arkansas Tech.

Arkansas Health Information Management Association Scholarship

An annual scholarship fund has been established by the Arkansas Health Information Management Association. The scholarship is awarded each spring to a deserving health information management major. The recipient is determined by the Executive Board of the Arkansas Health Information Management Association.

Arkansas Livestock Show Scholarship

The University will award annually a one-half tuition scholarship to an outstanding FFA member, participating in the Arkansas State Livestock Show held each fall in Little Rock, to enroll in the Department of Agriculture. Winners of this scholarship are not eligible to succeed themselves, and the scholarship must be used the year immediately following high school graduation.

ATA Endowment Program

A $300 scholarship for African-American juniors or seniors in accredited teacher education programs in Arkansas colleges and universities. Details may be secured from the Student Aid Office or from Room 207, AEA Building, 1500 West Fourth Street, Little Rock, Arkansas 72201.

Troy and Marjorie Burris Art Materials Scholarships

Art supply scholarships, three $300 scholarships each semester, established by Mr. and Mrs. Troy Burris, to be awarded to majors in art. Art faculty will nominate students, based on the following criteria: art achievement and skill level, art grades, attitude, and commitment. Art faculty will determine the awards each semester.

FFA Scholarships

The scholarship program for the national FFA organization will be determined jointly by an officer of the University and the FFA organization. Information concerning this program can be secured from the State Department of Education or the Tech Department of Agriculture.

J.D. Knight Scholarship

This scholarship was established by Mrs. J.D. Knight in memory of her late husband, Mr. J.D. Knight, a former member of the Arkansas Tech Board of Trustees. The recipient must be majoring in accounting, business, or economics and must have an interest in banking as a possible career.

Cora McHenry Scholarship for Teaching Excellence

Four tuition scholarships available to minority students committed to teaching in the public school of Arkansas at either the elementary or secondary level. Two of these scholarships will be awarded to elementary education majors and two to secondary

majors on a competitive basis. To apply a student should submit a high school transcript, two letters of recommendation from school officials, a brief handwritten essay on why the applicant is interested in teaching, and a record of activities in school, church, and the community to the Director of Teacher Education, School of Education, Arkansas Tech University. This scholarship is renewable as long as the recipient maintains a 2.50 grade point average and remains eligible for the teacher education program. Application deadline is April 15.

Pope County Association for Handicapped Scholarships

One or more scholarships of varying amounts awarded annually to students with disabilities who are residents of Pope County and who are enrolled or admitted as post secondary students. Application forms may be obtained from high school counselors or from the Pope County Association for Handicapped, P.O. Box 2512, Russellville, Arkansas 72801.

Pope County Farm Bureau Scholarship

Two $1000 scholarships are awarded each year to Pope County residents who are members of the Pope County Farm Bureau and working toward a degree in agriculture. These scholarships are renewable as long as the recipient maintains a 2.50 grade point average. Selection is made by the Agriculture Department and the Pope County Farm Bureau.

Pope-Yell County Single Parent Scholarship

Scholarships are awarded each semester to single parents who are residents of Pope or Yell counties. Recipients must have applied for federal financial aid and be eligible for a federal Pell Grant. Application deadline is July 15 for the fall semester and December 1 for the spring semester. Applications are available from Pope-Yell County Single Parent Scholarship Board, River Valley Shelter for Battered Women and Children, Inc. P.O. Box 2066, Russellville, Arkansas 72811.

Russellville Junior Auxiliary Marge Crabaugh Scholarship

A tuition scholarship awarded annually to an upperclassman from the Russellville area.

R. Lewis Urton Senior Rehabilitation Scholarship

An annual scholarship provided by the Arkansas Rehabilitation Association covering fees for two semesters. The scholarship is awarded to a senior major in rehabilitation science. Applications for the scholarship must be received by April 10 of each year. Students interested in applying should contact the Director of the Rehabilitation Science program. Each applicant will be interviewed by a committee made up of members of the Arkansas Rehabilitation Association.

Academic Standards for Students Receiving Financial Aid Throught Federally Funded Programs

This policy applies to funds received through the Federal Pell Grant, the Federal Work Study, the Federal Perkins Loan, the Federal Supplemental Educational Opportunity Grant, the Federal Subsidized Stafford Loan, the Federal Unsubsidized Stafford Loan, the Federal Parent Loan for Undergraduate Students and the Arkansas Student Assistance Grant Programs.

The standards will be applied automatically and without favor or prejudice, with progress being checked at the end of each fall and spring semester.

Any appeal of this policy must be made in writing to the Financial Aid Academic Policy Appeal Committee and turned into the Financial Aid Office within thirty-days of the notification of non-compliance.

No special consideration of the effects of dropping classes will be allowed unless the Student Financial Aid Director is contacted for approval prior to dropping the course(s).

Students must meet all conditions of the policy. Noncompliance with any section will result in loss of aid.

Institutional Academic Suspension

Any student whose name appears on the institutional suspension list will not be eligible to receive aid for their next period of enrollment even if they do re-enroll with the approval of the Admissions Council.

It is the students responsibility to notify the Financial Aid Office when they are no longer on the suspension list.

Satisfactory Academic Progress – First Undergraduate Degree

A student is considered making satisfactory academic progress as a full-time student if the total credits earned (with a grade of "D" or better) are:

# of Semesters	Minimum Hours "Earned"	# of Semesters	Minimum Hours "Earned"
1	9	6	72
2	21	7	84
3	33	8	96
4	48	9	108
5	60	10	120

NOTE: ALL part-time students must always earn the number of hours in which they are enrolled.

Transfer Students

Transfer Students will be assigned an "equivalent semesters attended" based on the number of hours accepted by the Registrar's Office rounded down to the nearest quarter semester. Example: A student with fifty-four transfer hours would have an "equivalent semesters attended" of 4.5 (54 divided by 12 = 4.5). **It is the student's responsibility to make sure transfer transcripts are on file with the Registrar.**

Students may use summer hours earned at Tech to fulfill the academic progress requirement. Hours earned at another institution will not meet the requirement.

A student must have received a degree by the end of ten (10) full-time semesters for a degree normally requiring four years or six or (6) full-time semesters for degrees normally requiring two years. Less than full-time semesters will be counted proportionally (see chart below). All semesters attended will be counted whether a student received financial aid during the semester or not, but allowances will be made for semesters involving required remedial course work.

Attempted Hours

Part-time enrollment Chart:1 - 5 hrs=.25 semester

6 - 8 hrs=.50 semester

9 - 11 hrs=.75 semester
12+ hrs=1 semester

Students who have been granted academic clemency will still have their semesters attended counted on the basis of actual attendance.

A student receiving aid may completely withdraw ONE SEMESTER ONLY and return the next semester to receive all entitled financial aid. Upon withdrawing any additional semesters while on financial aid, the student will not receive aid for their next period of enrollment even if the number of semesters attended and hours earned would allow for the receipt of financial aid funds. The next period of enrollment hours must be equivalent to the number of hours enrolled during the second withdrawal semester. (Example: If a student withdraws a second time while enrolled in 12 hours, the student would have to pay for 12 hours before becoming eligible to receive financial aid).

Required Grade Point Average

All students must have a minimum cumulative grade point average (**GPA**) of 2.00 at the end of their fourth regular (fall and spring) semester or "equivalent semester" and maintain that minimum for all remaining semesters to continue on aid. No appeal will be granted for anyone in violation of the 2.00 GPA rule.A student who falls below the **2.00 GPA** will be reinstated upon bringing the grade point average back up to 2.00. However, financial aid will not be paid retroactively for any semester lost because of this requirement.

Subsequent Undergraduate Degree OR Teacher Certification

1. Full-time students must earn an average of twelve hours per semester.
2. Students must maintain a 2.00 GPA each semester.
3. Degree or certification must be completed by the end of four regular (fall and spring) semesters.

Application for Federal Student Aid

General--Students use the Free Application for Federal Student Aid and list Tech as one of the schools to receive information. Additionally, a student must complete a Tech application for student financial aid.

Deadline--To receive equal consideration, a student must have a complete application on file by April 15. All remaining funds will be awarded on a first-come, first-serve basis until depleted. **Note: All requested information must be returned to the Financial Aid Office by July 15 to ensure aid availability at the beginning of the fall semester.**

Federal Pell Grant

The Federal Pell Grant provides direct grants from the government to the undergraduate student for educational expenses. Since this is a grant program, the student does not have to repay the amounts received, unless the semester for which a grant is received is not completed.

Under current guidelines, only students who have never received a bachelor's degree are eligible for the Pell Grant. The university does not determine whether a student is financially eligible. The amount of the grant given to an individual student is based on a schedule provided to the university by the government. No eligible student will be denied a grant.

Federal Supplemental Educational Opportunity Grant Program

The purpose of the Supplemental Educational Opportunity Grant Program is to provide the means for a college education to qualified students of exceptional need. Each grant is awarded according to federal guidelines.

Student Employment

The University uses student employees when practicable, but students are not encouraged to work to an extent which would hinder their scholastic program.

Employment assignments are made under both the Federal College Work-Study Program and the institutional Non-Work-Study Program. To be eligible for student employment, the student must successfully pass minimum load requirements, satisfy grade point requirements, maintain satisfactory employer-employee relations, and have conduct and personal appearance that reflect credit to the student and the University.

Student Loans

Federal Perkins Loans

Under the program students may borrow up to $20,000 for undergraduate students and $40,000 for graduate students. Annual loan limits are $3,000 for freshmen and sophomores, $4,000 for junior and senior students, and $6,000 for graduates.

The repayment period and the interest do not begin until six months after the student completes studies. The loan bears interest at the rate of five percent per year and repayment of principal may be extended over a ten-year period. The University approves and makes the loans and is responsible for collections. Repayment is deferred for as long as a borrower is enrolled at an institution of higher education and is carrying at least a half-time academic load. Under certain conditions, a part or all of the loan may be canceled if the student enters the teaching profession.

Federal Family Education Loans

Federal regulations require a delayed disbursement of thirty days for all first-year, first-time undergraduate student borrowers in any Federal Family Education loan program. Additionally, all student borrowers must be enrolled in a minimum of six hours.

Federal Stafford Student Loans

The Federal Stafford Student Loan program authorizes loans up to $2,625 per year for first-year undergraduates, $3,500 for second-year undergraduates, and $5,500 per year for undergraduates who have completed two years of undergraduate work. Graduate students may borrow up to $8,500 for a school year. The maximum an undergraduate student may borrow is $23,000 which is included in the $65,500 maximum for graduate students. Under this program a student must financially qualify for the loan which is borrowed from a bank or other financial institution. The loan has a variable interest rate with a 8.25 percent cap.

Repayment of principal and interest ordinarily begins six months after the student leaves school or ceases to be at least a half-time student. The amount of the monthly payments will be based on the total amount borrowed.

Unsubsidized Federal Stafford Loans for Middle-Income Borrowers

The Federal Unsubsidized Stafford Loan has the same loan limits, deferments, and interest rate as the Stafford Loan. However, the student does not have to be financially eligible for the loan and must either pay the interest while in school or have it capitalized for repayment with the loan principal. The total borrowed in regular Stafford and Unsubsidized Stafford Loans may not exceed the student's yearly maximum as shown above.

Federal PLUS Loans

Parents of students who do not qualify for the Federal Stafford Loan may borrow annually the amount of the student's cost of education minus other aid for each child who is enrolled at least half-time and is a dependent undergraduate student. PLUS is limited to parents who do not have an adverse credit history, and late payments on outstanding obligations are not to be considered as having adverse credit history. The interest rate is variable with a cap of nine percent, with the borrower beginning payment within sixty days of loan disbursement. All loan checks will be written as co-payable to the parent and the educational institution.

Additional Federal Unsubsidized Stafford Loan

Independent students may borrow up to $4,000 per year for the first two years of undergraduate study and $5,000 per year thereafter with an undergraduate maximum of $23,000. Graduate students may borrow up to $10,000 per year with a combined undergraduate and graduate total of $73,000. Borrowers do not have to show need but do have to apply for financial aid and may have to undergo a credit analysis. The interest rate is variable with a cap of 8.25 percent. Interest must be paid beginning sixty days after disbursement of the loan unless the lender agrees to defer it.

Mr. Tommy Memorial Student Loan Fund

Arkansas Tech has a special loan fund known as the "Mr. Tommy Memorial Student Loan Fund." This fund was established by Arkansas Tech alumni as a memorial to the late E.S. Tomlinson, for many years head of the biology department. Supplementing lesser contributions by hundreds of former students is the Margaret McFadden Lykes, Jr., contribution. Loans from this fund are limited in amount and intended primarily for emergency aid to students. One semester of successful residence is required of all students applying for these loans. Information relative to this fund may be obtained from the Student Services Office.

Dr. James I. Balch Student Loan Fund

An interest-free loan to be repaid in installments of twenty percent, forty percent, and forty percent at nine, eighteen, and thirty-six month intervals. A student must be a junior or senior with a 3.0 cumulative grade point average, must demonstrate financial need, and must file a separate loan application which is available through the Student Aid Office.

Arkansas Elks Educational Loan Fund

A loan program for Arkansas students in their junior and senior years. The maximum yearly loan is $1,500. Interest is charged on loans at the rate of eight percent from the date the student graduates or leaves school. Applications may be obtained from Geo Mace, 807 Olive Street, Jonesboro, Arkansas 72401.

Other Sources of Assistance

Arkansas Department of Higher Education Programs

The programs listed below are awarded and administered by the Arkansas Department of Higher Education. Further information and applications may be obtained by writing to: Arkansas Department of Higher Education, 114 East Capitol, Little Rock, AR 72201, or by calling (501) 371-2000, or 1-800-547-8839.

Arkansas Academic Challenge Scholarship Program

A college scholarship plan to promote academic achievement and encourage academically prepared Arkansas high school graduates to enroll in the state's colleges and universities. The scholarship provides $2,500 annually and is renewable for up to three more years provided the student meets the continuing eligibility standards established by the Arkansas Department of Higher Education. This scholarship will not displace any other state grants or scholarships unless required by state or federal regulations. Names of recipients may be released to the news media to recognize the accomplishments of the recipients.

Award is made based on the applicant meeting minimum standards with regard to the ACT composite score, grade point average (GPA) in the precollegiate core curriculum defined by the State Board of Higher Education, and financial need.

Arkansas Student Assistance Grant Program

A program which provides grants to aid undergraduate students in need of financial assistance. The amount varies depending on available funding.

Emergency Secondary Education Loan Program

A loan program administered by the Arkansas Department of Higher Education. An applicant must be an Arkansas resident; U.S. citizen or permanent resident; foreign language, mathematics, special education, guidance/counseling, gifted/talented or science major; enrolled as a full-time student in an approved institution; and plan to teach in an approved shortage area in an Arkansas secondary school for at least five years. Loan recipients who teach full-time in a secondary school in Arkansas following certification in a discipline listed above shall, upon annual certification by an appropriate school official, have one-fifth (1/5) of the total loan and related interest forgiven for each year employed in such capacity to a maximum of five years when the total loan and accumulated interest will be forgiven. Applications should be submitted prior to April 1.

Governor's Scholars Program

The Governor's Scholars Program provides $4,000 merit grants each year to one hundred of Arkansas' academically superior high school graduates in order to assist them in their undergraduate studies at approved colleges or universities in Arkansas. The scholarship is renewable for up to four years. Applications should be submitted prior to March 1.

Law Enforcement Officer's Dependents Scholarship

Dependents of Arkansas law enforcement officers who have been fatally injured or permanently and totally disabled in the line of duty may be entitled to an eight-semester scholarship. The scholarship may cover expenses for tuition, fees, and room, exclusive of books, food, school supplies, materials, and dues or fees for extracurricular activities, at any state-supported college or university.

MIA/KIA Dependent's Scholarship

The MIA/KIA Program may cover expenses for tuition, fees, and room, exclusive of books, food, school supplies, materials, and dues or fees for extracurricular activities, at any state-supported college or university for dependents of Arkansas citizens serving in the Armed Forces of the United States who are prisoners of war, missing in action, or were killed in action.

Minority Teachers Scholarship

This program loans up to $5,000 per year for African American students who are enrolled in a teacher education program and are interested in teaching at the elementary or high school level. After graduation, recipients are required to teach full-time in a public school in Arkansas for 5 years to receive full forgiveness of the loan. Applications should be submitted prior to June 1.

Arkansas Technical Careers Student Loan Forgiveness Program

The Arkansas Technical Careers Student Loan Forgiveness Program was created by Act 652 of 1999. The program is designed to assist and encourage people to enter and complete programs qualifying them to fill the demands for employees in various technical occupations. Student loans may be forgiven up to $2,500 per year for a maximum of four years. High demand career fields are determined annually by the State Board of Workforce Education and Career Opportunities. Further information may be obtained from the Department of Workforce Education at (501) 682-1500 or by visiting their website at http://www..work-ed.state.ar.us.

Workforce Investment Act

The Workforce Investment Act is a federal program which provides financial assistance to individuals in need. The program's primary targets are individuals with barriers to employment and dislocated workers. Candidates who meet eligibility requirements will receive tuition and book scholarships for two years to complete an associate degree at Arkansas Tech University. WIA is an equal opportunity employer/ program. Auxiliary aids and services are available upon request to individuals with disabilities. Requests for information about eligibility may be made through the WIA office,103 N. Rochester, Russellville, AR 72801; telephone 968-4919; TDD/ARS: 1-800-285-1131.

Information concerning the programs of study available to WIA-eligible candidates may be obtained from the Arkansas Tech WIA Office, Doc Bryan Student Services Center, Office 239, Russellville, AR 72801; telephone 964-0828.

Vocational Rehabilitation Assistance

Persons who have substantial handicap to employment as a result of a permanent disability may receive, at no cost to themselves, vocational counseling and some financial assistance toward the cost of their college training when the vocational objective of the disabled person is approved by the Vocational Rehabilitation Counselor. These services are available through the Division of Rehabilitation Services, 1401 Brookwood Drive, Little Rock, Arkansas 72203. Application for assistance or request for information about the program may be made to that address or to a local rehabilitation counselor.

Veterans Benefits

Arkansas Tech University is approved by the State Approving Agency for Veterans as a school (college, university, etc.) whereby veterans and dependents of deceased or

disabled veterans may obtain subsistence while working toward a degree. Eligible students should contact the Office of the Registrar to obtain information regarding school attendance under the following program: Title 38, Chapter 30, Montgomery GI Bill for Veterans; Title 38, Chapter 32, Veterans Educational Assistance Program (VEAP); Title 38, Chapter 35, Survivors and Dependents Education; and Title 10, Chapter 106, Montgomery GI Bill for Selective Reserves.

All students must be working toward a degree and should follow the curriculum outline for their objectives, since only specific courses may be applied toward VA certification and graduation. Veterans may be given placement credit for prior military training. The Office of the Registrar is available to assist students concerning VA benefits. The Office of the Registrar is located in the Doc Bryan Student Services Center, Office 153.

Enrollment certification will not be sent to the Department of Veteran's Affairs until transcripts are on file and the person applying for veteran's benefits has been admitted to the University.

Activities and Organizations

Arkansas Tech University is exceptionally rich in the number of activities and organizations offered to its students. There are few members of the student body who do not take part in one or more of these activities.

Activities, except the all-university events sponsored by the Student Activities Board, revolve around a large number of active student organizations which link together students with kindred tastes and interests.

The purpose and operation of the student organizations may be found in the current Arkansas Tech University Student Handbook.

Governmental

Interfraternity Council
Panhellenic Council
Residence Hall Association
Student Government Association

Honorary Professional

Honor Society for Nursing
Kappa Kappa Psi
Phi Beta Lambda
Pi Mu Alpha Sinfonia
Pi Kappa Delta
Sigma Alpha Iota
Sigma Tau Delta
Tau Beta Sigma

Honorary Service

Alpha Phi Omega
Phi Eta Sigma

National Professional

M.E.N.C. Student Chapter
Student National Education Association

Religious

Baptist Student UnionLutheran Student Fellowship
Catholic Campus MinistryMissionary Baptist Student Fellowship
Chi AlphaUnited Campus Ministries
Church of Christ Student CenterWesley Foundation
Latter Day Saints Student Association

Social

Alpha Gamma SigmaLambda Chi Alpha
Delta ZetaPhi Lambda Chi
Sigma Phi EpsilonZeta Tau Alpha

Special Interest

Accounting ClubJapanese Animation Society
Agri ClubMath Club
Alpha Kappa LambdaMedical Assistant Association
Art ClubNational Communication Association
Association of Black StudentsStudent Club
Association for Cultural InteractionNihonkai
ATU Fisheries & Wildlife ClubNon-Traditional Student Association
ATU Geological Society Physics Club
Broadcast GuildPolitical Science Club
BACCHUSPre-Medical Club

Behavioral Science Club & AdvocatesRecreation and Park Administration Club
for Students with DisabilitiesRotaract Club
BiGALAROTC
Campus Environmental CoalitionSpanish Club
Chemistry ClubStudent Activities Board
Chess ClubStudent Health Information Management
College RepublicansStudent Nurses Association
Computer Science ClubTaiwan Students Association
Engineering SocietyTech Disk Club
German ClubTech Soccer Club
Health, P.E. & Wellness ClubTech Theatre Guild
History/International RelationsVolunteer Action Council
Hospitality SocietyYoung Democrats
International Emergency Management
Student Association

University Recognized Groups

Brass Choir
Chamber Choir
Cheerleaders
Choir
Concert Band
Concert Chorale
Golden Girls Drill Team
Jazz Band
Marching Band
Orchestra
Student Ambassadors
Student Publications
Arka-Tech
Agricola (yearbook)
Symphonic Band

REGULATIONS AND PROCEDURES

All students must give prompt attention to communications from faculty and staff members of the University. Most communications will be sent through the United States mail or to your official Tech e-mail address.

Academic Dishonesty

In addition to taking reasonable steps to discourage cheating, the faculty must accept a responsibility to clarify and interpret for the students' matters of dishonesty, such as cheating or plagiarism.

If an occurrence of academic dishonesty is detected, the instructor may adjust the grade as appropriate, ranging from a grade penalty on the test or assignment involved to an "F" in the course. When a penalty for academic dishonesty is invoked, the instructor is required to submit to the Vice President for Academic Affairs immediately following the occurrence (a) a statement of circumstances, (b) the name of the student(s) involved, and (c) the penalty imposed. The student(s) involved has the right to appeal the action through the "Procedures for Appeal of Student Academic Grievances" as adopted by the Faculty Senate on May 2, 1978.

Involvement in such activities as conspiracy or breaking and entering, is to be reported to the Vice President for Student Services for appropriate action through regular university disciplinary channels.

Academic Probation

Freshman students will be placed on academic probation whenever their semester grade point falls below 1.50 unless the cumulative grade point at Arkansas Tech is 2.00 or higher. Sophomore, junior, or senior students will be placed on academic probation whenever their semester grade point falls below 2.00 unless the cumulative grade point is 2.00 or higher. These criteria also apply to entering transfer students.

Students may be removed from probation by completing a minimum of 12 semester hours with a grade point of 1.50 if a freshman; 2.00 if a sophomore, junior or senior; or, in each case, by raising their cumulative grade point to 2.00 or higher. Summer course work at Arkansas Tech may be used to raise the cumulative grade point to 2.00 or higher. The Vice President for Academic Affairs, in certain circumstances, may waive the minimum hour requirement.

Students who in a probationary semester fail to remove themselves from probation but achieve a 1.25 grade point if a freshman or a 1.75 semester grade point if a sophomore, junior, or senior, may continue on probation for the following semester.

Academic Suspension

Suspension will be automatic for students who in a probationary semester fail to achieve a 1.25 semester grade point if a freshman; 1.75 semester grade point if a sophomore, junior or senior; or who fail to remove themselves from probation within three successive full semesters. Students may combine summer term grades at Arkansas Tech with those of the semester immediately preceding in order to establish eligibility for retention in college.

Suspension means that the student may not attend Arkansas Tech the succeeding regular semester; after one regular semester the student may be eligible

for readmission on academic probation. Students receiving a second academic suspension will be eligible to seek readmission one year from the date of suspension. Students who believe there are extenuating circumstances which would justify earlier readmission must appeal to the Vice President of Academic Affairs for a hearing with the Admissions Council. Students who meet the semester/year stipulation must file a request for readmission with the Registrar's Office.

Students on academic suspension who wish to transfer to Arkansas Tech must meet the eligibility standards for readmission to the last college/university attended before being considered for readmission to Tech.

Adding/Dropping Courses

The deadline for adding courses or changing courses or sections is given in the University calendar; thereafter, changing to audit or dropping a course are the only changes permissible. Courses officially dropped during the first ten weeks of a semester will be recorded as "W." Courses dropped during the next three weeks of a semester will be recorded as "WP" for students who present a written statement from the instructor that they are passing at the time. Otherwise, a "WF" will be recorded and the course will count in grade point computation. Please note: A student accumulating an excessive number of absences in a course may be dropped from the course by the instructor with a grade of “F*”. Courses dropped subsequent to this time will be recorded as "F." (See University calendar). Students may add, drop, or change sections of courses only by following the official procedure which requires that they obtain and return the necessary forms to the Registrar's Office after obtaining the formal approval of their academic advisor. Failure to complete this procedure can result in a grade of "F" being entered on the student's record. A fee of $5 will be charged except for changes made for the convenience of the University.

Auditing Courses

Auditing of courses requires official admission to the University, approval of the Office of Academic Affairs and the instructor involved, and payment of the regular fee for the course. Audit will be on a "space available" basis. Students auditing courses are subjected to the same regulations as other students with regard to registration and attendance, but they do not take examinations nor receive credit for the course. A student accumulating an excessive number of unjustifiable absences in an audited course may be administratively withdrawn at the request of the instructor. Students may change from taking a course for credit to audit during the first ten weeks of the semester. Students enrolled for audit who do not wish to complete the course(s) must complete official drop/withdrawal procedures stated in this section of the catalog.

Class Absence

Regular class attendance is considered essential if students are to receive maximum benefit from any course. Control of class attendance is vested in the teacher, who has the responsibility of defining early in each course his/her standards and procedures. A student accumulating an excessive number of unjustifiable absences in a course may be dropped from the course by the instructor with a grade of "F*." A student who is dropped from three courses in a semester for unsatisfactory class attendance may be immediately suspended.

Class Load Policy

A student can expect to spend 2-3 hours outside the class (for studying, homework, preparation, etc.) for each hour in the class. This means that a student can expect to spend 24-36 hours in studying for a 12 semester credit hour load. It is therefore recommended that a full-time student enroll in no more than 18 hours per semester (7 hours per summer session). Students working full-time are encouraged to take no more than 12 hours per semester. Students readmitted after academic suspension cannot take more than 12 hours per semester (3 hours per summer session). Students on academic probation must obtain approval from their advisor to enroll in more than 15 hours per semester.

These totals include all courses for which students may enroll. Permission to take course loads above these maximums must be obtained in advance of registration from the dean of the school of the student's major.

Course Overload

Students who enroll above the maximum loads without securing permission from the dean will be dropped from their classes. To be considered for a course overload, the student must submit a petition to the dean and should meet the following criteria:

1. Have a 3.25 minimum grade point average in the preceding two summer sessions (minimum: 12 semester hours) or in the preceding fall or spring semester (minimum: 12 semester hours) at the university, or
2. Be in good academic standing in the school if in the last semester before graduation.

The maximum overload permitted in any school by an approved petition is a load totaling 24 hours for a fall or spring semester, nine hours in summer session I or II, and 15 hours for any combination of summer enrollments. Overloads over 21 hours will be subject to review by the Office of Academic Affairs.

Class Standing

Students with fewer than 30 semester hours are classified as freshmen, students with 30 through 59 semester hours as sophomores, students with 60 through 89 hours as juniors, and students with at least 90 hours as seniors.

Clemency

In accordance with Act 1000 of 1991, a student who has not attended Arkansas Tech University for a period of at least three years may apply to have the grades and credits for one or more consecutive terms or semesters earned prior to the three year separation removed from his/her grade point average. Any undergraduate student who has previously attended Arkansas Tech University may qualify to request academic clemency providing the following criteria are met.

After re-entering Tech following a separation of at least three years, a student may request academic clemency at the Office of the Registrar for approval by the Vice President for Academic Affairs. The student must specify the term or consecutive terms for which academic clemency is desired. Any petition for academic clemency must be requested and granted prior to the beginning of the second semester of enrollment after returning to Tech. Academic clemency may be granted only one time and is irreversible. If the request is approved, Academic Clemency will cover all credits

earned during the term or terms for which academic clemency is requested. The student's complete record will remain on the transcript with the added notation of "academic clemency granted" and the effective date.

For purposes of degree requirements, a student who received academic clemency must follow the provisions of the catalog in effect at the time of re-enrollment.

Academic clemency does not restore eligibility for student financial aid, scholarships or athletic eligibility.

Conduct

Arkansas Tech University expects its students to obey all the policies of the university and all federal, state and local laws. Each student, as a member of the Tech community, assumes an obligation to obey all rules and regulations made by properly constituted authorities. Failure to comply can result in disciplinary actions which may include disciplinary probation, suspension for a stated period of time, or expulsion which is permanent forced withdrawal. Conduct for which a student is subject to disciplinary action is published in the Student Handbook available in the Office of the Vice President for Student Services and in other official publications of Tech.

Dean's List

Undergraduate students whose grade point at the end of each semester is 3.50 or better, based on a minimum of 12 semester hours of work, will be place on the Dean's list for outstanding scholarship. Recognition will be accorded these students through appropriate news media.

Financial Obligation

Before any degree is conferred the candidate must have paid any debt owed the University.

Grading and Examinations

Although Arkansas Tech University does not require fixed grade percentages in individual classes, equitable grading requires certain rough proportions which should, generally, approximate the normal grade curves. This system is more applicable to lower-level courses; upper-level courses will usually depart from this pattern.

Final grades are reported to the Registrar's Office at the end of the semester. Midterm grades are reported for freshmen only. Midterm and final grade reports are sent to the student and student's advisor. A grade of "I" may be recorded for a student who has not completed all the requirements of a course **only** in situations where the student has an illness or other circumstances beyond the student's control, and has completed seventy-five percent of the course requirements. If a grade of "I" is assigned, the instructor will complete an "Incomplete Grade Contract", setting a reasonable time limit within the following semester in which the work must be completed. The incomplete grade contract is to be signed by both the instructor and student. Beginning the first summer term, 1990, and thereafter, a grade of "I" will not be computed in the grade point average for the semester recorded; however, the "I" will be automatically changed to a grade of "F" for grade and grade point purposes at the end of the next regular semester (fall or spring) unless course requirements are completed and the final grade is reported before the end of the semester. A grade of "I" recorded prior to the first summer term, 1990, will be computed as an "F" for grade point purposes until the "I" is removed.

No grade other than "I" may be changed after it is recorded except if an instructor finds that a grade has been erroneously recorded. The instructor may correct the grade by submitting a written request and explanation of the error to the Vice President for Academic Affairs.

Grade points are awarded on the basis of: A, 4 points; B, 3 points; C, 2 points; D, 1 point; F, 0 points.

Graduation

All degrees are awarded at officially scheduled commencements. Participation in commencement is required of all candidates for degrees except in cases involving hardships. The student may officially petition for the degree to be granted in absentia. Please refer to the section entitled "Graduation Requirements" for information pertaining to transcript evaluation, application for graduation, payment of graduation fees, and other graduation requirements.

Graduation Honors

The bachelor's degree with honors will be conferred upon candidates who at graduation have earned a minimum grade point average on all courses taken (both transfer and residence credit) as follows: Summa Cum Laude–3.900 - 4.000, Magna Cum Laude–3.700 - 3.899, Cum Laude–3.500 -3.699. A minimum of 30 hours of residence credit at Tech is required to qualify for a degree with honors. Students qualify for honors based on their grade point average on all college-level hours, including transfer hours whether or not accepted for credit. Graduation honors will be determined by work taken at Arkansas Tech if the cumulative grade point on work at Arkansas Tech is lower than the cumulative grade point on all college work. The associate degree with honors will be conferred upon candidates subject to the grade point average criteria listed above in the applied science programs only. **This policy is effective to new students enrolling in the first summer term, 2000, and subsequent terms. Previously enrolled students should contact the Office of the Registrar for clarification of the policy.**

Junior Standing

To be admitted to junior standing a student must have a grade point average of 1.75 or better on 60 or more semester hours of acceptable credit.

Late Registration

For registration after the period stated in the University Calendar, a fee of $25 is charged.

Repeated Courses

Students may repeat courses they have taken at Arkansas Tech University for the purpose of grade point adjustments (1) only by re-enrolling in the same courses at Arkansas Tech University and (2) subject to the following provisions. For repeated 1000- and 2000-level courses, only the grade from the last attempt of the repeated course is calculated into a student's cumulative grade point although all grades and all attempts are recorded on the student's academic record. For repeated 3000- and 4000-level courses, all grades for repeated courses are calculated into the student's cumulative grade point and all attempts of the repeated course are recorded on the student's academic record. Students must notify the Office of the Registrar upon completion of a repeated course for appropriate adjustments to their cumulative grade

point. Adjustments to cumulative grade points are not made for courses transferred from other colleges or universities.

Student Records

Student academic records are maintained in the Office of the Registrar. Unofficial copies of academic records are available for guidance purposes to students and their advisors. All student records are maintained in compliance with the standards and guidelines of The Family Educational Rights and Privacy Act of 1974, Federal Law 93-380.

The Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 assures confidentiality of education records containing information directly related to a presently enrolled student, a former student, or alumni.

The institution, according to the Act, may make public "directory information" about a student, e.g., name, address, e-mail address, date and place of birth, telephone listings, attendance, participation in officially recognized activities and sports, weight and height of members of athletic teams, and the previous educational agency or institution attended unless the student specifically requests in writing that his/her prior consent be obtained.

A request to suppress from public distribution the above mentioned information must be made in writing annually, to the Vice President for Student Services, no later than September 15 of the academic year for which the information is being made public. Further information may be obtained from the Student Services Office.

Traffic Regulations

By authority of the Board of Trustees and in accordance with Legislative Act 328, 1967, Arkansas Tech University requires all members of the faculty, staff, student body, and classified personnel to register motor vehicles which they own or operate on the Tech campus or on lands controlled by the University.

All registrants shall abide by all traffic and parking regulations as outlined by a printed pamphlet available in the Doc Bryan Student Services Building, or at the Department of Public Safety office where vehicles will be registered. Registration shall be accomplished within a seven-day period immediately following the beginning of the fall or spring semester, or within the 48-hour period (excluding Saturday and Sunday) following acquisition of a vehicle during the school year.

Vehicle registration cards are available at the Student Accounts Office. When completely processed the cards show owner's name, state registration number, driver's license number, make, year, model, color, and insurance in force on vehicle to be registered and an emergency point of contact should the listed driver be unavailable.

Prior to reporting to the vehicle registration office, registrants should bring their completed registration card, driver's license and current Tech identification card to the official in charge of registrations. An official Arkansas Tech registration decal will be affixed to the vehicle, and the registration number recorded on the registration card to be filed at the traffic office. The registration fee and all penalties for traffic violations, as published in the Tech Traffic Pamphlet, will be charged to the registrant's account at the Student Accounts Office.

Withdrawals

A student who wishes to withdraw from school during a semester is required to follow the official withdrawal procedure which requires reporting to the Office of the Registrar. Students who withdraw without following this required procedure will have their grades recorded as "F." If a student withdraws officially, the procedure for recording grades is identical with that for dropping an individual course, as described in this section under the heading "Adding/Dropping Courses." If a student withdraws from school during the final two weeks of a semester, the Vice President for Academic Affairs may waive the requirement that grades of "F" be recorded if the circumstances forcing a withdrawal justify special consideration.

University Policy

While every effort will be made to conform to catalog announcements, the University reserves the right to adapt its program as may be necessary.

CURRICULA

The following abbreviations are used in describing curricula listed in this catalog.

SCHOOL OF BUSINESS (BA)

ACCT	Accounting	MGMT	Management
BUAD	Business Administration	MKT	Marketing
ECON	Economics	VOBE	Vocational Business
FIN	Finance Education		

SCHOOL OF COMMUNITY EDUCATION AND PROFESSIONAL DEVELOPMENT

EAM	Emergency Administration and Management	TELT	Electronic Technology
ECE	Early Childhood Education (Associate Degree only)	TIPM	General Industrial Plant Maintenance
TACR	Air Conditioning and Refrigeration(Technical)	TMAC	Machining
TDFT	Computer-Aided Drafting and Design	TMAT	Mathematics

SCHOOL OF EDUCATION (ED)

DE	Driver Education	LBMD	Library Media
ECED	Early Childhood Education	MLED	MiddleLevel Education
EDFD	Educational Foundations	MLMS	Middle Level Math/Science
EDMD	Educational Media	PE	Physical Education
ELED	Elementary Education	SEED	Secondary Educatio
GTED	Gifted Education	WS	Wellness Science
HLED	Health Education		

SCHOOL OF LIBERAL AND FINE ARTS (LFA)

AMST	American Studies	JPN	Japanese
ANTH	Anthropology	LAT	Latin
ART	Art	MUSM	Museum
CHIN	Chinese	MUS	Music
CJ	Criminal Justice	PHIL	Philosophy
ENGL	English	POLS	Political Science
FR	French	PSY	Psychology
GEOG	Geography	READ	Reading
GER	German	RS	Rehabilitation Science
GRK	Greek	RUSS	Russian
HIST	History	SOC	Sociology
HUM	Humanities	SPAN	Spanish
INST	International Studies	SPH	Speech
ITAL	Italian	TH	Theatre
JOUR	Journalism		

SCHOOL OF PHYSICAL AND LIFE SCIENCES (PLS)

AHS	Allied Health Science	HIM	Health Information Management
BIOL	Biology	MEDT	Medical Technology
CHEM	Chemistry	NUR	Nursing
FW	Fisheries & Wildlife Biology	PHSC	Physical Science
GEOL	Geology	PHYS	Physics

SCHOOL OF SYSTEMS SCIENCE (SS)

AGAS	Agricultural Animal Science	COMS	Computer and Information Science
AGBU	Agricultural Business & Economics	ENGR	Engineering
AGEG	Agricultural Engineering/ Mechanization	HA	Hospitality Administration
AGPS	Agricultural Plant Science	MATH	Mathematics
AGSS	Agricultural Soil Science	RP	Recreation & Park Administration

INTER-SCHOOL AREAS

HONR	Honors Program	MS	Military Science

GRADUATION REQUIREMENTS

Major fields of study leading to the bachelor of arts degree are offered in art, art education, creative writing, english, foreign language, general studies, history and political science, international studies, journalism, music, psychology, rehabilitation science, sociology, and speech. Major fields of study leading to a bachelor of science degree are offered in accounting, agriculture business, biology, business education, chemistry, computer science, early childhood education, economics and finance, electrical engineering, emergency administration and management, engineering, engineering physics, fisheries and wildlife biology, geology, health and physical education, health information management, hospitality administration, management and marketing, mathematics, mechanical engineering, medical technology, middle level education, nursing, physical science, and recreation and park administration. Associate of science degrees are offered in early childhood education, information technology, medical assistant, and nuclear technology. Associate of applied science degrees are offered in industrial electronic technology, industrial plant maintenance, and industrial systems. An associate of arts degree is offered in general studies.

Students have a choice of the catalog under which they may complete graduation requirements. Non-transfer students must choose to complete requirements for graduation under the provisions of the Arkansas Tech University catalog in force at the time they enter Tech or in any subsequent Arkansas Tech catalog provided they were enrolled at the University during the year the catalog was in effect. Transfer students must choose to complete graduation requirements under the provisions of the Arkansas Tech catalog in force at the time they first enrolled in any college or any subsequent Arkansas Tech catalog, provided the Tech catalog was not over four years old at the time they entered Arkansas Tech, and they were enrolled in college either at Tech or elsewhere during the year in which the catalog was in effect. Students pursuing a second baccalaureate degree must use the Arkansas Tech University catalog in effect at the time they first enroll subsequent to receiving the first degree or any subsequent Tech catalog provided they were enrolled at the University during the year the catalog was in effect. **The catalog a student selects to use to complete degree requirements may require departmental approval and approval of the Registrar's Office if significant curriculum changes have occurred.**

Commencement participation

Students will participate in the commencement ceremony held at the end of the fall or spring semester during which they complete all degree requirements. Students who are within seven(7) semester hours of completing coursework for degree requirements during the summer term(s) will participate in the preceding Spring commencement ceremony. Students in excess of this limit will participate in the following December ceremony. Diplomas are mailed to graduates following commencement. Participation in commencement is required of all candidates for degrees except in cases involving hardships the student may officially petition the Vice President for Academic Affairs for the degree to be awarded in absentia.

Degree audit and application for graduation

Candidates for graduation must complete a degree audit and an application for graduation and pay the graduation fee.

Seniors completing graduation requirements at the end of the fall semester must submit to the Registrar's Office a request for a degree audit and an application for graduation on or before the end of the eighth week of the previous fall semester. Seniors completing graduation requirements at the end of the

spring semester or either of the following summer sessions must submit a degree audit request and an application for graduation on or before the end of the eighth week of the previous spring semester.

Students who file an application for graduation but fail to complete all graduation

requirements as planned must submit a new degree audit, a new application for graduation, and pay an additional graduation fee for the semester or term in which graduation is planned.

Graduation fee

A graduation fee, payable at the Student Accounts Office, is assessed when the application for graduation is approved.

Students who plan to complete graduation requirements but do not have a minimum grade point of 2.00 in the major and overall may not be eligible to participate in commencement.

An official record of any correspondence or transfer work completed at another institution must be on file in the Registrar's Office prior to the end of the semester or term in which graduation is planned.

For effective use of the results of its constant re-examination of student needs and as a means for improving its total educational program, the University reserves the right to make effective immediately any change in graduation requirements for students whose studies have not advanced beyond the level at which the change becomes operative.

REQUIREMENTS FOR BACCALAUREATE DEGREES

A. Residence

1. The last 30 semester hours of work toward a degree must be done in residence.
2. No more than a total of 30 semester hours of correspondence, extension, and credit by examination work may be applied as credit towards a degree.

B. Hours of Credit and Grades

1. At least 124 semester hours (excluding pre-college level courses) must be successfully completed.
2. The cumulative grade point average must not be less than 2.00. No more than 25 percent of the semester hours required at Arkansas Tech to satisfy graduation requirements may carry the "D" grade. Students must have a 2.00 grade point in courses in their major.
3. At least 40 semester hours must be in junior and senior courses, preferably more.
4. No more than four semester hours of activity credit (basic military science and those courses that may be used to meet the General Education activity requirement) may be counted toward graduation. The only exception is that a student may have the standard allowance of military credit (three hours of military science and three hours of PE credit) and four other hours of activity credit for a total of ten semester hours. A student registering for an activities course in excess of these limits receives no credit for the additional course and the grade is not included in the computation of grade point.
5. Only six hours of freshman English composition may be used to satisfy degree requirements.

Credit earned from technical courses is meant for use only in Technical Degree Programs and can not be used as credit earned toward a baccalaureate degree.

7. A transfer student must present a minimum of six semester hours in junior-senior courses taken at Arkansas Tech University in the major in which the degree is to be granted.
8. A student finishing two baccalaureate degrees concurrently must

successfully complete a minimum of 154 semester hours (excluding pre-college level courses) and all requirements for each degree. An additional $5.00 graduation fee will be charged for the second diploma.

C. General Education Requirements

To meet the need for all students to have educational experiences which broaden their knowledge of the arts, humanities, and sciences, all curricula are designed to include basic courses in these areas. The general education requirements are listed on pages 78-80.

D. Competence in English, Mathematics, and Reading

Each candidate for a baccalaureate degree is required to demonstrate the ability to write English clearly and correctly by completing the freshman composition courses (ENGL 1013 or 1043 and ENGL 1023 or 1053) with a grade of "C" or better. A student who receives a grade of "D" or "F" in English 0303, 1013, or 1043 must repeat the course to earn a grade of "C" or better before enrolling in the next course of the English sequence. The same criteria apply to transfer students.

A student who is placed in READ 0103 must earn a grade of "C" or better in the course or receive a departmental waiver to complete the reading requirement.

Students showing evidence of deficiency in mathematics will be counseled to enroll in appropriate remedial courses. All students must earn a grade of “C” or higher in the course used to satisfy the general education mathematics requirement.

E. Examination for Education Majors or Teacher Candidates

Section 1 (b) of Act 5 of the first Special Extraordinary Session (1983) of the Arkansas General Assembly stipulates: "After July 1, 1984, all colleges and universities in this State shall require persons who are education majors or teacher candidates to take the examination prescribed by the State Board of Education for initial certification as a teacher in the public schools of this State and to report the results of the examination to the college or university prior to graduation. All colleges and universities in this State shall report the results of the examinations to the Department of Education upon request."

F. Complete all assessment activities required by the University.

REQUIREMENTS FOR ASSOCIATE DEGREES

The requirements for medical assistant are outlined under the statements of the School of Physical and Life Sciences; requirements for the associate degrees in information technology and nuclear technology are outlined under the statements of the School of Systems Science; and requirements for the associate degree in early childhood education, associate of applied science in industrial plant maintenance, industrial electronic technology and industrial systems are outlined under the statements of the School of Community Education and Professional Development. The requirements for the associate degree in general studies are outlined under the statements of the School of Liberal and Fine Arts. In addition to completing the necessary hours prescribed, candidates for associate degrees must meet the following requirements:

1. The last 30 semester hours of work toward a degree must be done in residence.
2. The cumulative grade point average must not be less than 2.00 and not more than 25 percent of the semester hours may carry the "D" grade.

3. Six semester hours of freshman English must be completed. Refer to major field of study for additional requirements.

   Credit earned from technical courses is meant for use only in Associate of Applied Science Degree Programs and can not be used as credit toward other associate degrees.

5. At least 20 semester hours of course work above the 1000 level are required for the degree of Associate of Arts in General Studies.

6. Complete all assessment activities required by the University.

REQUIREMENTS FOR ADDITIONAL DEGREES

Bachelors Degree

To complete an additional bachelors degree, the following must be completed: (a) a minimum of 30 semester hours (18 of which must be upper division) at Arkansas Tech in addition to the hours earned for the first degree, (b) all University catalog requirements for the major field of study with the exception of the university-wide general education requirements, (c) applicable requirements specified under "Requirements for Baccalaureate Degrees".

Associate Degree

To complete an additional associate degree, whether the first degree is a bachelor or associate, the following must be completed: (a) a minimum of 30 semester hours at Arkansas Tech in addition to the hours for the first degree, (b) all University catalog requirements for the major field of study, (c) applicable requirements specified under "Requirements for Associate Degrees".

The catalog a student selects to use to complete degree requirements may require departmental approval and approval of the Registrar's Office if significant curriculum changes have occurred.

ASSESSMENT PROGRAM

Two assessment plans were developed by the Arkansas Tech University Assessment Committee during the 1994-95 academic year. The first plan relates to the assessment of General Education as required by Act 874 of 1993 and guidelines of the State Board of Higher Education. The second plan is required by the North Central Association of Colleges and Schools and outlines a comprehensive assessment program for the University.

The first assessment of General Education was conducted by the administration of tests to eligible students in the spring of 1995. All students enrolled at the University in programs requiring the State Minimum Core of 35 hours will be required to take the tests for assessing General Education. These tests must be completed no earlier than accumulating 45 college-level credits (excluding developmental education credit) and no later than completing 60 college-level credits. Students who have already earned 61 or more credits as of January 1, 1995, are exempt from this assessment. Failure to complete this testing requirement will interrupt enrollment at the next registration period.

Assessment is conducted university-wide to measure student progress toward educational goals, to improve teaching and learning, and to evaluate institutional effectiveness. A number of instruments of various types are used in the assessment process. Details of the complete assessment program can be obtained by contacting the Learning Assistance and Testing Center.

GENERAL EDUCATION REQUIREMENTS

The general education component is the common requirement of all baccalaureate students at Arkansas Tech University. The knowledge and skills acquired in the general education component enable students to analyze problems, to arrive at intelligent conclusions, and to make reasoned choices in their professional and personal lives. A well rounded, liberal education should increase the choices

available to Arkansas Tech University's graduates, thereby improving the quality of their lives and the lives of those whom they influence.

Many of the general education courses were designed to deal primarily with processes rather than simply with facts, to help students to develop individually and as members of a group, and to instill in students the desire to continue to learn throughout their entire lives.

Students who earn degrees at Arkansas Tech University should

1. Be able to listen attentively, and read, write, and speak clearly and effectively,
2. Show competence in reasoning and handling of abstract and quantitative ideas and be able to create mathematical models and use mathematical techniques to solve the problems which they encounter,
3. Demonstrate a basic competency in the accessing, processing, and presenting of information through computer technologies,
4. Have a knowledge of the history of Western and Non-Western cultures and recognize the interdependent nature of the global economic, political, and social institutions and systems,
5. Have a basic knowledge of a foreign culture or language and an appreciation of the differences in thought processes, methods of communication, and value systems from culture to culture,
6. Understand the nature and function of the arts, explore and learn to enjoy the possibilities of artistic creation, and discover how the full range of human experience is given expression in works of art,
7. Comprehend the basic principles, philosophy, and methodology of science and the influence of science and technology on society,
8. Have an understanding of the history and culture of the United States and of the development and change of American social, political and economic systems,
9. Have a basic knowledge of some of the great philosophical concepts and ideas of the world and develop the capacity to comprehend moral and ethical issues,
10. Understand and appreciate the importance of the factors that contribute to personal health and wellness.

To accomplish the above goals, Arkansas Tech requires the completion of the following general education curriculum. Students should refer to the curriculum in their major area of study for specific courses either recommended or required by the academic department to fulfill the general education requirements.

<<Gen. Ed. Table Goes here>>

STATE MINIMUM CORE

The courses that comprise Tech's general education curriculum also constitute the University's State Minimum Core, established in accordance with Act 98 of 1989, for implementation the fall semester of 1991. Act 98 requires colleges and universities to identify "a minimum core of courses which shall apply toward the general education core curriculum requirements for baccalaureate degrees at state supported institutions of higher education and which shall be fully transferable between state institutions."

CREDIT BY EXAMINATION

Information concerning the following tests may be obtained from the Arkansas Tech University Learning Assistance and Testing Center or from the appropriate department.

Advanced Placement (AP) Program

High school students who participated in The College Board's AP Program may receive college credit by attaining Tech's AP qualifying score. Credit earned through AP may satisfy general education requirements; however, to be awarded credit students must complete with passing grades one regular semester of work at Arkansas Tech University. Following are the AP examinations that Tech will accept, the corresponding qualifying score required, and credit awarded.

AP Examination	Qualifying Score	Credit Awarded
American History	3	HIST 2003 & HIST 2013
Biology	3	BIOL 1124 & BIOL 1134
Calculus AB	3	MATH 2914
Calculus BC	3	MATH 2914 & MATH 2924
Chemistry	3	CHEM 2124 & CHEM 2134
Chemistry	3	CHEM 1114 & CHEM 3254
English Lang/Comp or Lit/Comp	3	ENGL 1013
	3	ENGL 1013 & ENGL 1023
	4	FR 1014
French	2	FR 1014 & FR 1024
German	4	GER 1014
Latin	2	GER 1014 & GER 1024
Music Theory	4	LAT 1013
Physics B	2	LAT 1013 & LAT 1023
Physics C	4	MUS 1713, MUS 1723
Psychology	3	MUS 1731 & MUS 1741
Spanish	3	PHYS 2014 & PHYS 2024
Statistics	3	PHYS 2114
	3	PSY 2003
	2	SPAN 1014
	4	SPAN 1014 & SPAN 1024
	3	MATH 2163

College Level Examination Program (CLEP)

CLEP allows students to earn credit toward graduation by attaining Tech's qualifying score on either the general and/or subject examinations. A student may acquire a maximum of 30 hours of college credit through CLEP. It is possible to earn 29 semester hours of credit through the CLEP General Examinations and 18 semester hours of credit through the CLEP Subject Examinations. Credit earned through CLEP may satisfy general education requirements; however, to be awarded credit students must complete with passing grades one regular semester of work at Tech. Credit may be earned either before or after enrollment as long as a comparable or more advanced course in that area has not been completed (received course grade of passing, failing, or audit). No more than one subject examination may be taken in a particular departmental area, and students must have prior approval from the department in which they are majoring to count the hours toward graduation.

It is recommended that an ACT sub-score of 24 or above or an SAT sub-score of 500 or above be used as a guideline for attempting to earn credit through CLEP. Following are the CLEP examinations that Tech will accept, the corresponding qualifying score required, and credit awarded.

General Examination	Qualifying Score	Credit Awarded
English Composition with Essay	50	ENGL 1013
College Mathematics	TBA	ENGL 1013 & ENGL 1023
Natural Sciences	50	MATH 1103
Social Sciences & History	56	BIOL 1014
	50	PHSC 1013, PHSC 1021
	56	HIST 1503
		HIST 1503 & HIST 1513

Subject Examination	Qualifying Score	Credit Awarded
Algebra, College	50	MATH 1113
Algebra - Trigonometry, College	50	MATH 1113 or MATH 1203
American Government	50	POLS 2003
American Literature	50	ENGL 2013
Biology, General	50	BIOL 1014
Calculus with Elementary Functions	49	MATH 2914
Chemistry, General	50	CHEM 2124
Composition, Freshman College	55	CHEM 2124 & CHEM 2134
(An essay must be completed with this exam)	50	ENGL 1013
	55	ENGL 1013 & ENGL 1023
English	50	ENGL 3413
Literature	55	ENGL 3413 & ENGL 3423
French Language, College Level	42	FR 1014
German Language, College Level	50	FR 1014 & FR 1024
History of the United States I: Early	43	GER 1014
Colonizations to 1877	55	GER 1014 & GER 1024
History of the United States II: 1865	49	HIST 2003
to the Present	49	HIST 2013
Information Systems & Computer	52	COMS 1003
Applications	50	PSY 2003
Psychology, Introductory	50	SOC 1003
Sociology, Introductory	45	SPAN 1014
Spanish Language, College Level	55	SPAN 1014 & SPAN 1024
Trigonometry	50	MATH 1203

Foreign Language Advanced Placement and Credit

Students with previous foreign language experience may petition the Department of Foreign Languages and International Studies for advanced placement and credit. Petitioners will be given written and/or oral examinations by a foreign language faculty member, who will then recommend an appropriate foreign language placement level. This placement level will not exceed FR 3013, GER 3013, GRK 2023, JPN 2024, LAT 2023, or SPAN 3013, and will be approved by the department head. Students who have omitted one or more courses in the basic language sequence will receive credit for omitted courses when they have validated their advanced placement by passing the course into which they are placed with a grade of "C" or better.

Challenge Subject Examinations

Students who have had extensive experience in health care settings may elect to attempt to earn credit through an institutional challenge examination in the following subjects or technical programs:

AHS 2013 Medical Terminology

HIM 3024 Introduction to Health Information Management

HIM 3033 Basic Coding Principles

HIM 3133 Alternative Health Records

HIM 3132 Health Data and Statistics

Lab-based courses in Industrial Plant Maintenance and Industrial Electronic Technology (Advisor recommendation required).

Nursing Examinations

Registered nurses, licensed practical nurses, and/or licensed psychiatric technician nurses seeking admission to Arkansas Tech University's nursing program may elect to demonstrate and validate previous collegiate-quality nursing education. This may be accomplished by successfully

completing certain ACT-PEP, CLEP, and National League for Nursing examinations as determined by Arkansas Tech University's Department of Nursing as described on page 166 in this catalog.

Internships

Arkansas Tech University endorses the internship approach to learning and has adopted university-wide guidelines. This approach can help students understand the

reality of certain careers and supplement academic instruction with practical, realistic implementation in a work environment. Academic credit can be earned for internships in several degree programs. Please see individual programs for availability of specific degree credit.

UNIVERSITY HONORS

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The University Honors Program at Arkansas Tech University is designed to provide an enriched intellectual experience for students of outstanding educational talents and leadership potential. At Arkansas Tech, the Honors student will benefit from opportunities to interact with other highly-motivated students and outstanding professors in the challenging atmosphere of small, innovative Honors classes specially designed to foster rational enquiry, critical thinking, and analytical skills.

Application to University Honors should be made as early as possible during the senior year of the high school student. Honors students are selected through an application process which includes a written essay and personal interviews on our campus. To be eligible for University Honors, the high school student must have a minimum ACT Composite score of 28 and a cumulative grade point average of 3.5 or higher.

Students in the honors program take special sections of General Education courses in their freshman and sophomore years, followed by participation as peer mentors during the junior year. The senior year requires completion of the Senior Honors Project, as well as presentation of project results at an annual Senior Honors Symposium.

Students selected for the University Honors program receive excellent scholarships as well as such privileges as preferred preregistration, opportunities for individual directed study with Tech professors, and special recognition at commencement. The prescribed curriculum for the University Honors program is provided below.

HONORS CURRICULUM

Freshman Year		Hours
Fall Semester:	HONR 1001 (01) Freshman Honors Seminar	1
	ENGL 1043 (H01) Honors Composition I	3
	HIST 1503 or 1513 (H01) World Civilization	3
	HIST 2003 or 2013 (H01) U.S. History	
Spring Semester:	PHSC 1013 (H01)Introduction to Physical Science[1]	3
	PHSC 1021 (H01) Physical Science Lab[1]	1
	alternated with BIOL 1114, 1124, or 1134 (H01)[2]	
	ENGL 1053 (H01) Honors Composition II	3
Sophomore Year		
Fall Semester:	ECON 2003 (H01) Principles of Economics I	3
Spring Semester:	PHIL 2003 (H01) Introduction to Philosophy	3
	ENGL 2003 (H01) Intro to World Literature	
Junior Year		
	Find a Project Director for the Senior Honors Project	
	Mentor an incoming freshman	
Senior Year		
Fall Semester:	HONR 4093 (H01) Senior Honors Project	3
Spring Semester:	Honor students will present their Senior Honors Projects at the Senior Honors Symposium.	
		Total 19-23

[1]For students in certain majors, PHSC 1013 and PHSC 1021 may be waived.
[2]The course offered will be decided by the department chair and the Director of University Honors.

SCHOOL OF BUSINESS

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All School of Business graduates and their employers will recognize the undergraduate preparation for success provided by the School as second to none in Arkansas.

The primary mission of Arkansas Tech University's School of Business is to provide intellectual foundations to support a life-long learning process. An emphasis is placed on serving full-time undergraduate students from western Arkansas. Education in the fundamental skills and methodologies of business management are combined with a broad exposure to the liberal arts.

We believe that teaching quality and the currency of the subject matter can best be maintained through ongoing professional interaction with peers and the business community. Faculty are expected to engage in scholarly activities and encouraged to participate in service that supports the primary mission. The intellectual contributions orientation is directed toward applied scholarship and instructional development.

School of Business faculty and students use current technology to develop communication, critical thinking and problem-solving skills. Students are encouraged to participate actively in the learning process. A high degree of faculty-student interaction is sought through management of class sizes and individualized advising. The School aspires to prepare its graduates for personal and professional success in an evolving global business environment.

PROGRAMS OF STUDY

The School of Business is committed to preparing students for meaningful careers in business, industry, government or education; or for admission to and success in quality graduate programs. This commitment is founded on the belief that graduates from the School should have a strong background in the liberal arts as a basis for mature understanding of the problems of business leadership and management. The objective of the general education curriculum required of all School of Business majors is to ensure they acquire a knowledge and understanding of topics in the humanities, sciences, communications, social sciences and other related subjects to support a lifetime of continual learning.

Students who major in any of the bachelor degree programs in the School of Business are required to complete a common core of business courses. One objective of this curriculum is to provide a foundation of knowledge for business in the areas of accounting, behavioral science, economics, mathematics, and statistics. Another objective of the business core is to ensure that School of Business graduates gain an understanding of perspectives that form the context for business.

The School of Business offers programs of study leading to baccalaureate degrees as listed below:

Bachelor of Science

Accounting	Business Education
Economics and Finance	Management and Marketing

The baccalaureate degree program in business offered by the School of Business is accredited by AACSB - The International Association for Management Education. AACSB is the premier accrediting agency for business schools, stressing academic excellence and a commitment to continuous improvement. Approximately one third of the business schools in the United States and several selected schools internationally have earned AACSB accreditation.

Transfer students

In order to meet baccalaureate degree requirements, all transfer students must take in residence a minimum of fifty percent of the School of Business courses required for the degree. Of these courses, at least 24 hours must be 3000-4000 level, 12 hours must be in the student's major field, and 9 hours must be in the business core curriculum.

Business courses taken at other institutions at the 1000-2000 level which are offered by Tech at the 3000-4000 level must be validated in order to receive credit

for specific course requirements. Business courses taken at other institutions at the 3000-4000 level are subject to validation.

In order to enroll in 3000- and 4000-level courses offered by the School of Business, students majoring in business must have the proper course prerequisites and satisfy the following enrollment requirements:

1. Must have completed a minimum of 54 hours.
2. Must have a cumulative grade point average of 2.00 or above.
3. Completion of the following eighteen hours of business foundation courses:
   ACCT 2003 and 2013
   ECON 2003 and 2013
   Six hours from BUAD 2003, BUAD 2033, BUAD 2053

Business students who meet enrollment requirements (1) and (2) above and have only completed fifteen hours of the foundation courses, may enroll in upper division business courses, provided they have the proper course prerequisites and they enroll in the remaining required foundation course in the same semester.

Students majoring in fields outside the School of Business may enroll in 3000- and 4000- level School of Business courses provided they have completed 54 hours of credit prior to enrollment, and provided they have the appropriate course prerequisites.

The Curriculum

A student who majors in one of the bachelor of science degree programs in the School of Business must complete:

1. The general education requirements as described in this catalog.
2. The following business core requirements:
   ACCT 2003 Accounting Principles I
   ACCT 2013 Accounting Principles II
   ECON 2003 Principles of Economics I
   ECON 2013 Principles of Economics II
   BUAD 2003 Business Information Systems
   BUAD 2033 Legal Environment of Business
   BUAD 2053 Business Statistics
   BUAD 3023 Business Communications
   ACCT 3063 Managerial Accounting **OR** ACCT 4023 Cost Accounting
   ECON 3003 Money and Banking
   FIN 3063 Business Finance
   MKT 3043 Principles of Marketing
   MGMT 3003 Management and Organizational Behavior
   MGMT 3103 Production Management
   MGMT 4013 Management Information Systems
   MGMT 4083 Business Policy
3. The following courses in the quantitative area:
   MATH 1113-College Algebra[1]
   MATH 2243-Calculus for Business and Economics
4. Requirements that are listed on the following pages under each major.
5. Sufficient elective hours to bring the student's total hours to 124 (the number required for graduation).

[1]Students who have two years of high school Algebra with a grade of "C" or better and a math ACT score of 22 or above may omit College Algebra and enroll directly in Math 2243, Calculus for Business and Economics.

DEPARTMENT OF ACCOUNTING

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Professor: Johnson
Associate Professors: Alexander, Bachman, R. Jones
Assistant Professor: Carr

The Department of Accounting offers a curriculum designed to provide students with professional and technical skills which will allow them to enter and progress in a career in the accounting profession. The program is structured to provide a broad, in-depth, base of knowledge in order for the student to choose from a variety of accounting careers. It is intended that the accounting major will acquire the following:

1. An understanding of the total system of financial information flow in generating, analyzing, and communicating data useful to management, the public, or governmental agencies.
2. Techniques of analysis which will permit capturing, measuring, and communicating information to decision makers in the private and public sectors.
3. Knowledge of generally accepted accounting principles and how to apply them.

Employment opportunities for accounting graduates range from national, regional, and local public accounting firms to corporations, sole proprietorships, and national, state, and local governmental entities. Since the inception of the program in 1959, accounting graduates have established careers in every segment of the business world. The accounting profession offers a promising future for men and women who are comfortable in meeting people, expressing themselves, working in changing environments, and who possess an inquiring and logical thought process.

Holding the licensure designation as a Certified Public Accountant is viewed as evidence of a professional quality in the discipline of accounting. CPAs are viewed by the business world as individuals who possess a professional knowledge of accounting principles and concepts, and have the experiences necessary to make proper application of those principles and concepts. Students who desire to pursue this professional designation can complete the curriculum which will provide them with the necessary academic background to permit the graduate to sit for the uniform certified public accountant examination.

The goal of many students is a career in private accounting rather than public accounting. Professional designations such as Certified Management Accountant (CMA) and Certified Internal Auditor (CIA) are earned by completing examinations offered by their respective professional associations. Accounting majors who desire to complete those certification processes may complete a course of study which will enable them to be a candidate for those professional examinations.

Students who plan to pursue graduate studies should consider the entrance requirements of the graduate degree program which they desire to enter. Faculty advisors will work closely with these students to assist them in planning their course work to meet the graduate degree program requirements. Part of this planning will involve the student sitting for examinations such as the GMAT, GRE, or LSAT.

Professional Examination Requirements

All students who, upon graduation, plan to sit for a professional examination (CPA, CMA, CIA) should obtain a copy of the specific course requirements of the respective examination. The requirements should be considered in planning the student's course of study while completing the degree. The Arkansas State Board of Public Accountancy requires 150 semester hours of credit for first-time CPA Examination candidates effective with the first CPA Examination given in 1998.

The following curriculum in accounting leads to a bachelor of science degree with a major in accounting.

Curriculum in Accounting

Freshman Year		Fall	Spring
English Composition I, II (ENGL 1013, 1023)[1]		3	3
World Civilization I, II (HIST 1503, 1513)		3	3
Science[1]		4	4
Business and Professional Speaking (SPH 2173)			3
College Algebra (MATH 1113)[2]		3	
Calculus for Business and Economics (MATH 2243)			3
Electives[3]		3	
	Total	**16**	**16**
Sophomore Year			
Accounting Principles I, II (ACCT 2003, 2013)		3	3
Principles of Economics I, II (ECON 2003, 2013)		3	3
Fine Arts/Humanities[1]		3	3
U. S. History or Political Science[4]			3
Legal Environment of Business (BUAD 2033)		3	
Business Statistics (BUAD 2053)			3
Business Information Systems (BUAD 2003)		3	
Physical Education[1]		1	1
	Total	**16**	**16**
Junior Year			
Intermediate Accounting I, II (ACCT 3003, 3013)		3	3
Federal Taxes I, II (ACCT 3043, 3053)		3	3
Money and Banking (ECON 3003)			3
Business Communications (BUAD 3023)		3	
Electives[3]		3	
Management and Organizational Behavior (MGMT 3003)		3	
Cost Accounting (ACCT 4023)			3
Production Management (MGMT 3103)			3
	Total	**15**	**15**
Senior Year			
Advanced Accounting I, II (ACCT 4003, 4013)		3	3
Auditing (ACCT 4033)		3	
Management Information Systems (MGMT 4013)			3
Business Finance (FIN 3063)			3
Marketing (MKT 3043)		3	
Business Policy (MGMT 4083)			3
Electives[3]		6	3
	Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80).
[2]Students who have two years of high school algebra with a grade of "C" or better and a math ACT score of 22 or above may omit College Algebra and enroll directly in Math 2243, Calculus for Business and Economics. If omitted, an additional 3 hours of electives will be required.
[3]Thirteen(13) semester credit hours of electives must be earned in courses taught outside the School of Business.
[4]Three hours must be taken from the following: HIST 2003, HIST 2013 or POLS 2003.

DEPARTMENT OF BUSINESS AND ECONOMICS

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Associate Professors: Benefield, Black, Mason, R. Smith
Assistant Professors: Bequette, Finnell, Lucas

The Department of Business and Economics offers majors in management and marketing, economics and finance, and business education. Decision making as a process is stressed. Students are taught to search for and identify important facts and properly analyze them in developing sound alternative courses of action. Modern analytical techniques as well as the importance of the behavioral sciences are introduced.

Management and Marketing

The management and marketing option is designed generally to prepare students for careers as professional managers or as self-employed entrepreneurs in either profit-seeking or not-for-profit organizations. The curriculum emphasizes a comprehensive understanding of business principles and economic activities. The required course of study seeks to prepare the graduate not only for initial employment but for subsequent advancement in his/her chosen vocation. Effective education for business responsibility consists not only of the development of an understanding of the principles and methodologies which govern the organization and administration of the individual business enterprise, but also includes an understanding of larger problems and relationships of the economy as a whole.

Specific objectives of the program are to provide students who select the management and marketing major with the following:

Technical knowledge of the basic skills associated with the use of human, capital, and material resources to achieve organizational goals.

Technical knowledge of the basic skills associated with the movement of products from producers to consumers.

The ability, working individually or as a member of a team, to analyze and solve fundamental management and marketing problems.

Curriculum in Management and Marketing

Freshman Year	**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[1]	3	3
World Civilization I, II (HIST 1503, 1513)	3	3
Science[1]	4	4
College Algebra (MATH 1113)[2]	3	
General Psychology (PSY 2003)	3	
Business and Professional Speaking (SPH 2173)		3
Calculus for Business and Economics (Math 2243)		3
Total	**16**	**16**
Sophomore Year		
Accounting Principles I, II (ACCT 2003, 2013)	3	3
Principles of Economics I, II (ECON 2003, 2013)	3	3
U. S. History or Political Science[5]		3
Business Information Systems (BUAD 2003)	3	
Business Statistics (BUAD 2053)	3	
Legal Environment of Business (BUAD 2033)		3
Fine Arts/Humanities[1]	3	3
Physical Education[1]	1	1
Total	**16**	**16**
Junior Year		
Management and Organizational Behavior (MGMT 3003)	3	
Principles of Marketing (MKT 3043)	3	
Production Management (MGMT 3103)		3
Money and Banking (ECON 3003)	3	

Curriculum in Management and Marketing

Business Finance (FIN 3063)		3
Managerial Accounting (ACCT 3063) or Cost Accounting (ACCT 4023)		3
Consumer Behavior (MKT 3163)		3
Business Communications (BUAD 3023)	3	
Electives[3, 6]	3	3
Total	**15**	**15**
Senior Year		
Management or Marketing Elective		3
Marketing Research (MKT 4153)		3
Personnel/Human Resource Management (MGMT 4023)	3	
Business Policy (MGMT 4083)		3
Human Behavior in Organizations (MGMT 4093)	3	
Management Information Systems (MGMT 4013)	3	
Electives[3, 6]	3	
Approved Electives[3,4, 6]	3	6
Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80).
[2]Students who have two years of high school algebra with a grade of "C" or better and a math ACT score of 22 or above may omit College Algebra and enroll directly in MATH 2243, Calculus for Business and Economics. If omitted, an additional 3 hours of electives will be required.
[3]At least seven hours of electives must be taken outside the School of Business. Foreign language electives are encouraged.
[4]These electives must be part of an overall plan approved by the student's advisor. The plan should be chosen no later than the student's sophomore year and must be chosen before the student enrolls in elective courses. A student transferring from another institution or other major is required to make the elective plan selection when he or she designates Management and Marketing as a major.
[5]Three hours must be taken from the following: HIST 2003, HIST 2013, or POLS 2003.
[6] At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.

Economics and Finance

The study of economics and finance equips students to analyze a broad range of socioeconomic phenomena and policy alternatives. Regulation, environmental protection, economic growth and development, the distribution of income, resource allocation, international trade and finance, comparative economic systems, inflation, and the level of employment are some traditional topics of economics. The finance courses focus on financial definitions and concepts involving sources and uses of funds, personal investment strategy, and financial institutions.

The economics and finance course of study contains a theoretical core supporting the finance, accounting, marketing, and management fields. It is designed to prepare graduates for management or analytical careers in business or government. In addition, the major provides a foundation for graduate study in a variety of fields. Faculty advisors will work closely with students to assist them in planning their course work to achieve personal career objectives.

Students who complete the economics and finance program will be able to:

1. Understand economic concepts and relationships.
2. Understand financial decision making at the individual, corporate, and public policy levels.
3. Improve problem-solving skills through the application of economic and financial concepts.
4. Evaluate economic and financial issues in a global context.

Curriculum in Economics and Finance

Freshman Year		**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[1]		3	3
World Civilization I, II (HIST 1503, 1513)		3	3
Science[1]		4	4
College Algebra (MATH 1113)[2]		3	
Calculus for Business and Economics (MATH 2243)			3
Business and Professional Speaking (SPH 2173)			3
Electives[3]		3	
	Total	**16**	**16**
Sophomore Year			
Accounting Principles I, II (ACCT 2003, 2013)		3	3
Principles of Economics I, II (ECON 2003, 2013)		3	3
U. S. History or Political Science[5]			3
Legal Environment of Business (BUAD 2033)			3
Business Information Systems (BUAD 2003)		3	
Business Statistics (BUAD 2053)		3	
Fine Arts/Humanities[1]		3	3
Physical Education[1]		1	1
	Total	**16**	**16**
Junior Year			
Money and Banking (ECON 3003)		3	
Investments I (FIN 3043)		3	
Economics/Finance Elective (3000-4000 level)[4]			3
Business Finance (FIN 3063)			3
Electives[3]			6
Management and Organizational Behavior (MGMT 3003)		3	
Business Communications (BUAD 3023)		3	
Principles of Marketing (MKT 3043)			3
Managerial Accounting (ACCT 3063) or Cost Accounting (ACCT 4023)		3	
	Total	**15**	**15**

Curriculum in Economics and Finance

Senior Year		
International Economics and Finance (ECON 4093)		3
Production Management (MGMT 3103)		3
Principles of Risk and Insurance (FIN 4043)	3	
Business Policy (MGMT 4083)		3
Management Information Systems (MGMT 4013)	3	
Economics/Finance Electives (3000-4000 level)[4]	6	
Electives[3]	3	6
Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80).
[2]Students who have two years of high school Algebra with a grade of "C" or better and a math ACT score of 22 or above may omit College Algebra and enroll directly in MATH 2243, Calculus for Business and Economics. If omitted, an additional 3 hours of electives will be required.
[3]At least ten hours of electives must be taken outside the School of Business. Foreign language electives are encouraged.
[4]Six hours of economics electives must be taken from the following: ECON 3073, FIN 4023, and ECON 4053. The remaining three hours may be taken from this group plus ECON 3013 and ECON 4033.
[5]Three hours must be taken from the following: HIST 2003, HIST 2013, or POLS 2003.

SCHOOL OF COMMUNITY EDUCATION AND PROFESSIONAL DEVELOPMENT

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The School of Community Education and Professional Development offers programs of study leading to baccalaureate and associate degrees and certificates of proficiency as listed below:

Bachelor of Science
- Emergency Administration and Management

Associate of Science
- Early Childhood Education

Associate of Applied Science
- Industrial Electronic Technology
- Industrial Plant Maintenance
- Industrial Systems

Certificate of Proficiency
- Industrial Electronic Technology
- Industrial Plant Maintenance

Emergency Administration and Management

The bachelor of science degree in emergency administration and management was developed with the cooperation and support of the Federal Emergency Management Agency (FEMA). The program is designed to educate students and inservice emergency management providers about the human and physical consequences of natural and technological disasters and how to mitigate them. The program addresses competencies required of emergency management professionals in careers in federal, state, or local government, with specific emphasis on emergency response agencies, i.e., fire, law enforcement, emergency medical services, offices of emergency services, and specific agencies such as the Red Cross and other groups providing on-site emergency response and support. The degree is also designed for aspiring emergency professionals seeking a broad-based education in the procedures for coping with emergencies and major disasters.

Emphasis in this program will be placed on the awarding of credit for completed training, and/or certification based on knowledge, skills, and abilities. Up to 15 hours of credit may be awarded upon presentation of approved documentation. Equivalencies will be determined by the head of the department based on recommendations provided by the Non-Collegiate Sponsored Instruction Program of the American Council on Education and the International Association of Emergency Managers (IAEM), formerly known as the National Coordinating Council on Emergency Management (NCCEM), and FEMA's training arm, the Emergency Management Institute.

The curriculum provides a broad interdisciplinary program of study to support the technical specialty courses with two options available. The sociology option is designed for those individuals who want to work with the psychological and human elements of disaster and mitigation; whereas, those individuals who want to be involved in the front-line intervention and prevention of disasters should consider the environmental option. All majors will be required to complete 15 hours of administrative/management courses.

Curriculum in Emergency Administration and Management

Freshman Year	Hours
English Composition (ENGL 1013, 1023)1	6
Social Sciences1	6
Biological Sciences1	4
Technical Specialty Course[2]	6

Curriculum in Emergency Administration and Management

Mathematics (MATH 1113 or 1103)[1]		3
Physical Science[1]		4
Administrative[4]		3
	Total	**32**
Sophomore Year		
Social Sciences[1]		6
Fine Arts/Humanities[1]		6
Physical Education[1]		2
Technical Specialty Course[2]		3
Option[3]		9
Administrative[4]		3
Electives		3
	Total	**32**
Junior Year		
Technical Specialty Course[2]		9
Option[3]		9
Administrative[4]		6
Electives		6
	Total	**30**
Senior Year		
Technical Specialty Course[2]		3
Option[3]		3
Administrative[4]		3
Internship[5]		6
Externship[6]		15
	Total	**30**

[1]See General Education requirements (pgs. 78-80)
[2]With advisor recommendation
[3]See selected courses available in Sociology or Environmental Option
[4]See selected courses available in Professional/Administrative Core
[5]Arranged through advisor
[6]Equivalency credit awarded with appropriate documentation; otherwise coursework must be selected from the Technical Specialty or interdisciplinary core areas.

Emergency Administration and Management Technical Specialty Courses[1]

The student will select with the advisor's recommendation 21 hours of credit from the following technical specialty courses. EAM 1003, EAM 1013, and EAM 4033 are required courses for all students. EAM 4106 and EAM 4201-15 are required for all students, and are in addition to the 21 hours of credit required.

EAM 1003 Living in a Hazardous Environment
EAM 1013 Aim and Scope of Emergency Management
EAM 1023 Disaster Planning
EAM 2023 Disaster Response Operations and Management
EAM 2033 Citizen/Community Disaster Preparedness
EAM 2043 The Economics of Hazards and Disaster
EAM 3003 Developing Emergency Management Skills
EAM 3013 Public Administration/Policy and Emergency Management
EAM 3033 The Social Dimensions of Disaster
EAM 3043 The Politics of Disaster
EAM 4003 Disaster Relief and Recovery
EAM 4013 Business/Industry Crisis Management
EAM 4023 Information Technology and Emergency Management
EAM 4033 Emergency Management Research Methods/Analysis
EAM 4043 Disaster and Emergency Management Ethics

EAM 4053 Community Management of Hazardous Materials
EAM 4106 Internship
EAM 4201-15 Externship
EAM 4991-3 Special Problems and Topics

[1] With advisor recommendation

Emergency Administration and Management Interdisciplinary Core Sociology Option[1]

The student will select with the advisor's recommendation 21 hours of credit from the following courses which are currently offered within each departmental area.

SOC 2053 Statistics for the Behavioral Sciences OR
BUAD 2053 Business Statistics OR
MATH 2163 Introduction to Statistical Methods
SOC 1003 Introductory Sociology
SOC 2063 Communities & Social Organizations
SOC 3163 Introduction to Social Research
SOC 4063 Social Stratification
PSY 2003 General Psychology
PSY 2023 Consumer Psychology
PSY 2033 Psychology of Adjustment
PSY 3003 Abnormal Psychology
PSY 3043 Environmental Psychology
PSY 3093 Industrial Psychology
PSY 3153 Theories of Personality
PSY/SOC 3013 Psychosocial Aspects of Death & Dying
PSY 4043 Social Psychology
CJ 2003 Introduction to Criminal Justice
CJ 2013 Introduction to Security
CJ/POLS 3023 Judicial Process
CJ/PSY 3033 The Criminal Mind
CJ 3073 Police Administration
CJ 3153 Prison & Corrections
CJ 3206 The Law in Action
CJ 4023 Law & the Legal System
CJ 4053 Criminal Law & the Constitution
POLS 2013 Introduction to Political Science
POLS 3033 American State & Local Government
POLS 3053 Introduction to Public Administration
POLS 3093 American Municipal Government
POLS 3403 Comparative Government
POLS 3413 International Relations
POLS 3473 National Security Policy
POLS 4103 Environmental Politics
GEOG 4833 Geographic Information Systems OR
FW 4034 GIS in Natural Resources

[1] See selected courses available in Sociology or Environmental Option

Emergency Administration and Management Interdisciplinary Core Environmental Option[1]

The student will select with the advisor's recommendation 21 hours of credit from the following courses which are currently offered within each departmental area.

RP 1002 Wilderness Experience & Backpacking
RP 1992 Basic Forest Fighting
RP 2992 Wildland Fire Suppression- Water Use
RP 3993 Advanced Fire Fighting
PHYS 3033 Radiation Health Physics
ENGR 3512 Radiation Detection Laboratory

(Any level) Chemistry
HA 1013 Restaurant Orientation/Sanitation
MATH 2163 Introduction to Statistical Methods OR
BUAD 2053 Business Statistics OR
SOC 2053 Statistics for the Behavioral Sciences
HLED 3203 Consumer Health Programs
GEOG 2033 Physical Geography
GEOG 4023 Economic Geography
GEOG 4833 Geographic Information Systems OR
FW 4034 GIS in Natural Resources
GEOL 3153 Environmental Geology
PE 2513 First Aid

[1] See selected courses available in Sociology or Environmental Option

Emergency Administration and Management Required Administrative Professional Core[1]

The student will select with the advisor's recommendation 15 hours of credit from the following courses which are currently offered within each departmental area.

ACCT 2003 Accounting Principles I
ACCT 2013 Accounting Principles II
ACCT 4093 Governmental Accounting
BUAD 1003 Introduction to Business Systems
BUAD 2003 Business Information Systems
BUAD 2033 Legal Environment of Business
BUAD 2043 Principles of Word Processing
BUAD 2053 Business Statistics
BUAD 3023 Business Communications
COMS 1003 Intro to Computer Based Systems
COMS 2003 Microcomputer Applications
ECON 2003 Principles of Economics I
ECON 2013 Principles of Economics II
ECON 4033 Current Economic Problems
ECON 4093 International Economics & Finance
FIN 4043 Principles of Risk & Insurance
JOUR 2133 Intro to Mass Communication
JOUR 3173 Public Relations Principles
JOUR 4123 Laws of Communication
ENGL 2053 Technical Communication
MGMT 3003 Management & Org Behavior
MGMT 4023 Personnel/Human Res Mgmt
MGMT 4093 Human Behavior in Organizations
SPH 1003 Intro to Speech-Communication
SPH 2003 Public Speaking
SPH 2173 Business & Professional Speaking
SPH 3003 Interpersonal Communication
SPH 3033 Interviewing Principles & Practices
SPH 3053 Persuasion
SPH 3073 Group Discussion
SPH 3223 Nonverbal Communication
[1] See selected courses available in Professional/Administrative Core

Associate Degrees and Technical Certificates

The Associate of Applied Science Degree is designed for employment purposes, and it should not be assumed that the degree or the courses in the degree can be transferred to another institution. While a few institutions have recently begun to accept some courses in A.A.S. programs, the general rule is that courses in the A.A.S. Degrees are not accepted in transfer toward bachelor's degrees. Students to whom

transfer is important should get assurance in writing in advance and only from the institution to which they wish to transfer.

Early Childhood Education (Associate Degree)

The Associate of Science degree in Early Childhood Education is structured to provide a seamless acquisition of academic requirements for various career levels in occupations related to child care and early childhood education in the public and private sectors. The early childhood education courses provide the academic requirements for meeting assessment guidelines for the Child Development Associate (CDA) credential. The general education courses meet the requirements for the Bachelor of Science degree in Early Childhood Education.

Curriculum in Early Childhood Education

Freshman Year		
First Semester		**Hours**
English Composition I (ENGL 1013)[1]		3
College Algebra (MATH 1113) or Algebra for General Education (MATH 1103)		3
Introduction to Biological Science (BIOL 1014)		4
Introductory Sociology (SOC 1003)		3
Foundations and Theories in Early Childhood Education (ECE 2312)		2
Basic Child Growth and Development I (ECE 2112)		2
	Total	**17**
Second Semester		
English Composition II (ENGL 1023)[1]		3
Introduction to Physical Science (PHSC 1013)		3
Physical Science Laboratory (PHSC 1021)		1
First Aid (PE 2513)		3
Physical Wellness and Fitness (WS 1002)[2]		2
Basic Child Growth and Development II (ECE 2212)		2
Regional Geography of the World (GEOG 2013)		3
	Total	**17**
Sophomore Year		
First Semester		
Experiencing Art (ART 2123)		3
US History (HIST 2003 or HIST 2013)		3
Humanities (ENGL 2003 or ENGL 2013 or PHIL 2003)		3
Curriculum for Early Childhood Education (ECE 2513)		3
Methods and Materials Using Developmentally Appropriate Practices for Young Children (ECE 2613)		3
	Total	**15**
Second Semester		
American Government (POLS 2003)		3
Practicum in Early Childhood Education (ECE 2991-9)[3]		9
	Total	**15**

[1] See appropriate alternatives or substitutions in General Education requirements
[2] Satisfies physical education activity credit.
[3] Enrollment must be approved by advisor. See course description.

Industrial Electronic Technology

The Industrial Electronic Technology program leads to the Associate of Applied Science degree. This program is designed to prepare students for jobs in the use and maintenance of common electrical and electronic devices and instruments. This career program provides the student with the technological training necessary to work as an electronics technician or engineering aide. The electronics concentration includes practical experience in electronics troubleshooting with the necessary theory of electronic circuits.

Courses in general electronics are combined with general education courses to

provide firm foundation in a basic electronics, math, and writing skills. Electronic theory is supported with relevant laboratory experiences. Upon advisor approval, documented competencies acquired through training, certification, or licensure may be substituted as equivalencies for related technical courses. The majority of the technical courses are offered on a flexible schedule at off-site industrial locations.

To be admitted to the program, one must do the following: (1) apply for admission to Arkansas Tech University, (2) send to the university a certified copy of high school transcript, GED certificate, or college transcript(s), and (3) take the ACT or COMPASS. Those who make a score of less than 19 on the ACT in English, Mathematics, or Reading will need to take the appropriate developmental course or courses. Those who make a score of less than 59 in Math, 75 in Writing and 82 in Reading on the COMPASS will also be required to take the appropriate developmental course or courses.

Curriculum in Industrial Electronic Technology
Associate of Applied Science Degree

Freshman Year		**Hours**
Introduction to Computer Based Systems (COMS 1003)		3
Algebra for General Education or College Algebra (MATH 1103 or Math 1113)		3
Composition I (ENGL 1013)[1]		3
Fundamentals of Electricity I (TELT 1014)[2]		4
Fundamentals of Electricity II (TELT 1214)[2]		4
Composition II (ENGL 1023)[1]		3
Industrial Electricity I (TELT 1123)		3
Solid State I (TELT 1224)		4
Digital Electronics I (TELT 1314)		4
Engineering Graphics (ENGR 1002)		2
	Total	**33**
Sophomore Year		
Programming in Basic (COMS 1203)		3
Programmable Logic Applications (TELT 2014)		4
Solid State II (TELT 2214)		4
Digital Electronics II (TELT 2424)		4
Advanced PLC Systems (TELT 2233)		3
Industrial Electricity II (TELT 2313)		3
Electronics: Special Topics (TELT 2503)		3
Troubleshooting Electrical and Electronic Systems (TELT 2223)		3
Social Science[1]		3
	Total	**30**

[1] See General Education Requirements (pgs. 78-80).
[2] These two courses are taken as a block.

Curriculum in Industrial Electronic Technology Technical Certificate

The Technical Certificate in Industrial Electronic Technology is designed to enhance the technical skills and job-related knowledge of individuals who are currently employed as electronics technicians as well as other persons seeking careers in industrial electronic technology. Upon advisor approval, documented competencies acquired through training, certification, or licensure may be substituted as equivalencies for related technical courses. The majority of the technical courses are offered on a flexible schedule at off-site industrial locations.

The Technical Certificate provides training in the maintenance of most industrial electronics and electrical systems. Courses taken for the certificate may be applied to the Associate of Applied Science degree in Industrial Electronic Technology.

Certificate Requirements	**Hours**
English Composition I (ENGL 1013)[1]	3

Certificate Requirements	Hours
Mathematics (MATH 1103 or 1113)[1]	3
Fundamentals of Electricity I (TELT 1014)	4
Fundamentals of Electricity II (TELT 1214)	3
Intro to Computer Based Systems (COMS 1003)	3
Industrial Electricity I (TELT 1123)	3
Industrial Electricity II (TELT 2313)	3
Solid State I (TELT 1224)	4
Digital Electronics I (TELT 1314)	4
Programmable Logic Controllers Applications (TELT 2014)	4
Total	**35**

[1] See General Education Requirements (pgs. 78-80).

Industrial Plant Maintenance

The Industrial Plant Maintenance program leads to the Associate of Applied Science degree. This program is designed to: (1) enhance the technical skills and job-related knowledge of persons who are currently employed in the field of industrial plant maintenance, and (2) prepare inexperienced persons for entry-level job in industrial plant maintenance.

Instruction includes power distribution, programmable logic controllers, fluid power, welding, and machine shop. Emphasis is placed on troubleshooting skills and preventive maintenance techniques. Upon advisor approval, documented competencies acquired through training, certification, or licensure may be substituted as equivalencies for related technical courses. The majority of the technical courses are offered on a flexible schedule at off-site industrial locations.

To be admitted to the program, one must do the following: (1) apply for admission to Arkansas Tech University, (2) send to the University a certified copy of high school transcript, GED certificate, or college transcript(s), and (3) take the ACT or COMPASS. Those who make a score of less than 19 on the ACT in English, Mathematics, or Reading will need to take the appropriate developmental course or courses .Those who make a score of less than 59 in Math, 75 in Writing and 82 in Reading on the COMPASS will also be required to take the appropriate developmental course or courses.

Curriculum in Industrial Plant Maintenance
Associate of Applied Science Degree

Freshman Year	**Hours**
Composition I (ENGL 1013)[1]	3
Technical Mathematics (TMAT 1003)	3
Maintenance of Plumbing Systems (TIPM 1204)	4
Basic Machine Shop (TMAC 1013)	3
Blueprint Reading (TDFT 1013)	3
Introduction to Computer Based Systems (COMS 1003)	3
Hydraulics and Pneumatics (TIPM 1103)	3
Welding Option (TMAC 1135)	5
Machine Set-up and Operations I (TMAC 1025)	5
Total	**32**
Sophomore Year	
Composition II (ENGL 1023)[1]	3
Mechanical: Special Topics (TMAC 2503)	3
Algebra for General Education or College Algebra (MATH 1103 or Math 1113)[1]	3
Industrial Electricity I (TELT 1123)	3
Social Science[1]	3
Technical Electives[2]	14

Curriculum in Industrial Plant Maintenance
Associate of Applied Science Degree

Total	**29**

[1] See General Education Requirements (pgs. 78-80)
[2] See Technical Elective Options Below

Technical Electives

Each student will be required to complete 14 hours of technical electives. In selecting courses to fulfill the technical elective hours, the student shall work with an advisor to develop a cohesive set of courses to fulfill this requirement.

Machine Set-Up and Operations II (TMAC 2014)
Metallurgy (TIPM 2014)
Machine Processes (TMAC 2115)
Introduction to Air Conditioning Systems (TACR 2014)
Ammonia Refrigeration Systems (TACR 2114)
Intro. to Boiler and Steam Generation (TACR 2213)
Maintenance of Boiler and Steam Systems (TACR 2212)
Fundamentals of Electricity I (TELT 1014)
Fundamentals of Electricity II (TELT 1214)
Industrial Electricity II (TELT 2313)
Programmable Logic Controllers Applications (TELT 2014)

Curriculum in Industrial Plant Maintenance Technical Certificate

The Technical Certificate in Industrial Plant Maintenance is designed to enhance the technical skills and job-related knowledge of individuals who are currently employed in an industrial setting as well as other persons seeking careers in industrial plant maintenance. Upon advisor approval, documented competencies acquired through training, certification, or licensure may be substituted as equivalencies for related technical courses. The majority of the technical courses are offered on a flexible schedule at off-site industrial locations.

The Technical Certificate is a planned and coherent program of classroom and laboratory/shop work. It recognizes the completion of a specified level of competency in the field of industrial plant maintenance. The program of study is part of an Associate of Applied Science curriculum in Industrial Plant Maintenance.

Courses taken for the Certificate may be applied to the Associate of Applied Science degree in Industrial Plant Maintenance.

Certificate Requirements	Hours
English Composition I (ENGL 1013)[1]	3
Welding Option (TMAC 1135)	5
Blueprint Reading (TDFT 1013)	3
Basic Machine Shop (TMAC 1013)	3
Industrial Electricity I (TELT 1123)	3
Technical Mathematics (TMAT 1003)	3
Hydraulics & Pneumatics (TIPM 1103)	3
Maintenance of Plumbing Systems (TIPM 1204)	4
Introduction to Computer Based Systems (COMS 1003)	3
Introduction to Boiler and Steam Generators (TACR 2213) **AND** Maintenance of Boiler and Steam Systems (TACR 2212) **OR** Machine Set-Up and Operations I (TMAC 1025)[2]	5
Total	**35**

[1] See General Education Requirements (pgs. 78-80)
[2] Boilers and Refrigeration Systems

Associate of Applied Science

Industrial Systems

This program provides the student with the opportunity to earn college credit for validated competencies acquired through a vocational/technical school, community college, technical college, or industry training. Students seeking to articulate credit for prior learning must satisfy the following requirements:

1. The student must meet all regular admission requirements of Arkansas Tech University.
2. The student who is admitted to degree admission status must meet Freshman Placement Standards. Students will be required to meet all developmental programs as indicated by these standards.
3. A student pursuing articulated credit must have demonstrated competency by scoring no lower than one standard deviation below the national mean on the teacher/expert worker exam provided by the National Occupational Competency Testing Institute (NOCTI) in the occupational area for which the student is requesting credit.
4. The student must successfully complete 15 semester hours of credit at Arkansas Tech University (excluding developmental hours which earn institutional credit and may not be used to meet any degree requirements) before the 30 semester hours of validated credit can be awarded. The credit awarded for articulated competency will be designated on the transcript but will not count in the calculation of the student's grade point average.
5. Scores from the NOCTI exam completed more than five (5) years prior to application for admission to the program will not be accepted.

Curriculum in Industrial Systems

Freshman Year		**Fall**	**Spring**
English Composition[1]		3	3
Social Sciences[1]		3	
Social Sciences (HIST 2003, or HIST 2013, or POLS 2003)			3
Science[1]		4	4
College Algebra (MATH 1113)		3	
Statistics (MATH 2163)		3	
Statistical Process Control(MATH 2183)			3
Computer Science[2]			3
	Total	**16**	**16**
Sophomore Year			
Computer Science[2]		3	
Applied Technical Studies[2]		14	16
	Total	**17**	**16**

[1]See General Education requirements (pgs. 78-80).
[2]Must be approved by academic advisor.

SCHOOL OF EDUCATION

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The School of Education provides guidance and professional courses for students who plan to teach in early childhood, middle level, and secondary schools. The teacher education program is accredited by the National Council for Accreditation of Teacher Education (NCATE).

Students who plan to teach physical education, early childhood, or middle level must enroll in the School of Education. Those who elect to prepare for teaching in other fields must enroll in schools appropriate to their interests in teaching.

For the freshman or sophomore student who has not selected a major or specific teaching level or area, the School recommends enrollment in the undeclared program (see page 36). In addition to taking the required general education courses, students in this program are encouraged to take such electives as will provide them a good liberal education and help select a major field. Advisors in this program are selected to provide guidance to undecided students.

In making a decision to enter the teaching profession, students should seriously consider the demands which this choice entails. Among these are scholarship and intellectual curiosity; an interest in children and young people, and an understanding of their interests, problems, and development; a thorough understanding of the principles and skills employed by effective teachers; and an interest in and understanding of the role of the school in our society.

Students who elect the professional program in teacher education will complete their study in at least two stages. See the appropriate catalog section for the requirements for specific programs. Some courses in the area of specialization should also be completed. **Admission to Arkansas Tech University is a prerequisite to, but separate from, admission to teacher education.** Declaration of a major in one of the University's teacher education programs is also a prerequisite to making formal application for admission to teacher education. Even though admission to Tech and declaration of a teaching major are necessary conditions for admission to teacher education, they are not the only requirements. Other criteria are listed in the section below.

Admission & Retention in Teacher Education at Tech

Professional programs are composed of courses and activities designed to complete the undergraduate phase of professional preparation for teaching. Admission is by application to the Admission and Retention Committee of the Teacher Education Council. Before a student may enroll in professional education courses at the upper division level (the required 3000 and 4000 level professional education courses), he or she must be formally admitted to teacher education at Tech. Application forms may be obtained from the office of the Dean of the School of Education (Crabaugh 204) or the office of the Director of Teacher Education Student Services (Crabaugh 109).

To be admitted to programs in secondary education, teacher candidates must have two assigned advisors, one from the School of Education and one from the department representing their teaching concentration, have the approval of both advisors, satisfactorily complete the pre-admission requirements, have a cumulative grade point average of 2.50 on all college work completed including transfer work, and submit a plan of study approved by both advisors. An early childhood education or middle level education major will have one advisor from the Department of Curriculum and Instruction. Admission to teacher education will be recommended by the academic advisors and determined by the Admission and Retention Committee based on the following considerations: completion of English composition courses, an oral communication course, a college-level mathematics course, and the appropriate introductory education course with grades of "C" or higher, and completion of the Praxis I (PPST) with a score equal to or greater than the score determined by the Arkansas Department of Education. Other factors which reflect professional

competence, including moral and emotional stability, physical and mental health, intellectual curiosity, use of English, social awareness, and professional interest will be considered by the Admission and Retention Committee. Formal screening and subsequent admission into teacher education and the monitoring of satisfactory progress in the teacher preparation program represent institutional obligations to the teaching profession, the schools served by and working with the University's programs, and the agencies that approve and accredit teacher education programs.

Once admitted to teacher education, the student must maintain satisfactory progress throughout the completion of the teacher education program according to the standards cited above and any additional program standards in effect or lose eligibility to continue in that program. Course sequences and prerequisites will be followed carefully.

Admission Decision Appeals

A formal appeal of a decision to deny admission to teacher education may be made to the Admission and Retention Committee of the Teacher Education Council. Instructions and forms for such appeals are available in the Office of the Dean of Education. An appeal should be based upon exceptional or extenuating circumstances and/or other pertinent information **not** previously available or considered. A formal appeal must be submitted in writing to the Dean who will transmit it to the Committee. The Committee's decision may be appealed in writing to the Dean of the School of Education regarding admission to teacher education. If the appeal is not resolved at this level the student may appeal to the Vice President for Academic Affairs whose decision will be final.

Criteria for Student Teaching

Student teaching is normally expected to be the last requirement completed in teacher education programs. Student teaching requires a full-time academic and professional commitment. Student teaching requires the student to devote one semester of the senior year to full-time internship in an approved school. The student should plan the work of student teaching to provide one semester free of activities and responsibility which would interfere with the requirements of the professional semester. The student teacher is expected to follow the direction of the Field-Based Teacher, the School Principal, the Arkansas Tech University Supervisors, and the Arkansas Tech University Director of Teacher Education Student Services.

Admission requirements for secondary education include completion of all professional education courses, a minimum grade of "C" in all courses required for the teaching field and professional education, and a 2.50 grade point average in the courses required for the teaching field with a cumulative grade point average of 2.50 on all work attempted, including transfer work. Admission requirements for early childhood education and middle level education include no grade below “C” in any course work with a cumulative grade point average of 2.50 on all work attempted, including transfer work. Student teaching admission requires a Praxis II Specialty Area score which meets or exceeds the minimum scores established by the Arkansas Department of Education.

Appeals of Student Teaching Eligibility Decisions

Decisions made regarding a student's eligibility and readiness for placement or retention in student teaching may be appealed in writing to the Admission and Retention Committee of the Teacher Education Council. Such an appeal should be submitted to the Dean of the School of Education, who will transmit it to the Committee. The Committee's decision regarding an appeal may be appealed in writing to the Dean. If the appeal is not resolved at that level, the student may appeal to the Vice President for Academic Affairs whose decision is final. Appeals should be based on exceptional or extenuating circumstances and/or pertinent information **not** previously available or considered.

Student Teaching Application Process

STUDENTS MUST SUBMIT A FORMAL APPLICATION FOR ADMISSION TO STUDENT TEACHING. APPLICANTS FOR THE SPRING SEMESTER MUST SUBMIT THE APPLICATION PRIOR TO OCTOBER 1 OF THE FALL SEMESTER. APPLICANTS FOR THE FALL SEMESTER MUST SUBMIT THE APPLICATION PRIOR TO MARCH 1 OF THE SPRING SEMESTER. FAILURE TO MEET THESE DEADLINES COULD RESULT IN THE DELAY OF STUDENT TEACHING FOR A SEMESTER. PRIORITY IN STUDENT TEACHING PLACEMENT WILL BE GIVEN TO THOSE STUDENTS MEETING THE DEADLINES AND PREREGISTERING FOR STUDENT TEACHING FOR THE GIVEN SEMESTER.

Application forms for student teaching may be obtained during scheduled group meetings with the Director of Teacher Education Student Services.

Early Childhood candidates may accomplish student teaching by enrolling in ECED 4915. Middle level candidates may accomplish student teaching by enrolling in MLED 4912 . Secondary candidates may accomplish student teaching by enrolling in SEED 4809 or 4909 and SEED 4503, and any other courses required in their teaching concentration. **Assignment of the student to an approved station for student teaching is the responsibility of the School of Education based on policies developed by the School of Education. Placements are chosen to provide the best educational experience for the student teacher.**

APPLICANTS FOR ADMISSION TO STAGE II OR STUDENT TEACHING MUST MEET THE REQUIREMENTS THAT ARE IN EFFECT AT THE TIME OF APPLICATION. THE REQUIREMENTS FOR ADMISSION AND RETENTION AS PUBLISHED IN THE POLICIES AND PROCEDURES HANDBOOK OF THE ARKANSAS TECH UNIVERSITY TEACHER EDUCATION PROGRAM WILL SUPERSEDE CATALOG INFORMATION.

The School of Education offers programs of study leading to baccalaureate and associate degrees as listed below:

Bachelor of Science

Early Childhood Education
Middle Level Education
Health and Physical Education including a Wellness and Fitness Program Management option
Secondary Education (teacher licensure programs in life/earth science, business technology, mathematics, physical/earth science.[1]

Bachelor of Arts

Secondary Education (teacher licensure programs in art, creative writing, English, foreign language, history and political science, music, and speech)[1]

[1]Students preparing to teach in secondary schools must complete the courses required for specialization in a teaching concentration. These are listed in departmental sections of the catalog and recommended curricula patterns, including teacher licensure requirements, set forth in the School of Education section of this catalog.

Requirements for Teacher Licensure

Praxis Series

All candidates for licensure must accomplish the Praxis II, *Principles of Learning and Teaching,* and the appropriate specialty area exams of Praxis II. Scores must be sent directly from the Educational Testing Service to Arkansas Tech University.

Please refer to Item F, Requirements for Baccalaureate Degrees, in the Graduation Requirements section of this catalog.

Department of Curriculum and Instruction

The Department of Curriculum and Instruction offers programs leading to a degree and/or licensure in three areas: Early Childhood Education (Pre-K- Grade Four), Middle Level Education (Grade Four-Grade Eight), and Secondary Education (Grade Seven-Grade Twelve).

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Crabaugh Hall, Room 210
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Professors: Bell, Clary, Fleniken, Morgan, L. Robinson, Sheets
Associate Professors: Gunter, O'Reilly, Paxton, Rollans, Womack
Assistant Professors: S. Adams, Bain, Bean, Carter, Crawford, Garner, Griffin, Larson, Shopfner, Stephenson, Willis, C. Zimmer

Early Childhood Education[1]

The Early Childhood Education program meets the needs of today's children building on the common core of knowledge, performance, and dispositions needed for early childhood professional educators.

There are three phases in the Bachelor of Science Early Childhood Degree program. Students begin the first phase by taking general education requirements and are introduced to basic concepts, theory and practices in early childhood courses.

During the second phase students complete general education requirements and take courses specifically designed to prepare them for the profession. Admission requires minimum scores as determined by the Arkansas State Board of Education on the Praxis I; a minimum cumulative grade point average of 2.50 on college work attempted with no grade below "C" (including work from other colleges and universities); and beginning the development of a portfolio which must include an autobiography and documented evidence of observations of young children.

During the third phase of the early childhood program, students are placed in an appropriate environment for their Student Internship. Admission to this stage requires a minimum grade point average of 2.50 with no grade below "C" in all courses and a satisfactory score on the licensure exam as established by the Arkansas Department of Education. The experience requires a student to teach in both a PreK-K and a 1st- 4th grade setting. Students should make application for admission to the internship for the spring semester by October 1, or the fall semester by March 1, prior to the semester required.

[1]Information regarding the Associate Degree in Early Childhood Education is listed under the School for Community Education and Professional Development.

Middle Level Education

The Middle Childhood/Early Adolescence degree exists to provide quality preservice educational programs and services in preparation for teaching grades 4-8. The program prepares and nurtures interdisciplinary teachers who reflect content knowledge as well as facilitate creative talents.

The program is designed around a conceptual framework which organizes learning expectations and experience into manageable discipline-specific strands including: professional and pedagogical knowledge, knowledge of the student, developmentally appropriate and effective practices, knowledge of integrated disciplines, global and multi-cultural perspectives, technology, and a liberal arts and science background. The student entering the middle-level program must complete an integrated math/science or English/social studies curriculum.

The first phase of the middle level program is a pre-professional program and admission to this stage does not constitute approval for admission to the professional program in teacher education. Stage II is the professional phase of the preparation program. To be admitted to Stage II, middle level education majors will have an advisor to be assigned during the MLED 2001 course. Students must satisfactorily complete the requirements of the first stage, have a cumulative grade point average of 2.50, submit a plan of study approved by their advisor(s) for the completion of the program, completion of English composition courses, an oral communication course, a college-level mathematics course, and completion of MLED 2001 and 2011 with grades of "C" or higher. Competence in oral and written grammar will be assessed. Students must submit scores on Praxis I (PPST) that meet or exceed the levels established by the Arkansas Department of Education.

After satisfying all of the requirements at this level, the teacher candidate will apply for student teaching. Admission to student teaching requires completion of all professional education courses, senior standing, satisfactory completion of all prerequisites listed in the course descriptions, a minimum grade of "C" in all courses with a cumulative grade point average of 2.50, and the minimum score on the licensure examination as required by the Arkansas Department of Education.

Students should make application for admission to the internship for the spring semester by October 1 or for the fall semester by March 1 prior to the semester requested. Students must present scores on the appropriate licensure examination as directed by the Arkansas Department of Education.

University Center

Arkansas Tech University offers the junior- and senior level courses leading to a baccalaureate degree in early childhood education through the University Center located on the campus of Westark College in Fort Smith, Arkansas. The program is designed so that freshman- and sophomore-level courses are provided by Westark College, and the junior- and senior-level courses leading to the degree are provided by Arkansas Tech University. Students must be admitted to Arkansas Tech and to Stage II of the teacher education program to be eligible to enroll for the junior- and senior-level courses.

For further information contact the Tech coordinator at the University Center (501-788-7900) or the Department of Curriculum and Instruction (501-968-0291).

Secondary Education

The secondary education curriculum is designed to prepare students for teaching careers at the junior high school and senior high school levels. Students completing the NCATE approved program in secondary education will qualify for licensure in an area appropriate to their major field. The program recognizes three important components in the education of a prospective teacher: a strong general education, an in-depth knowledge in a selected teaching field, and a knowledge of the school, adolescents, and the teaching-learning process.

The Unit's conceptual framework is: Professionals for the Future. The framework emphasizes the concepts of teacher as instructional leader, reflective decision-maker, and problem solver who has knowledge of the student, a strong content and pedagogical knowledge, a commitment to their profession, and a desire to continue their development.

Students preparing to teach in secondary schools must complete the courses required for specialization in the appropriate curriculum, found beginning on page 111.

Students desiring entrance to the teacher education program in secondary education should apply for admission to Stage II during the second semester of their sophomore year. Students who are admitted to Stage II of the teacher education program for secondary teachers enroll jointly in course work for their degree specialization and course work in the Department of Curriculum and Instruction. For example, students planning to teach mathematics enroll in the math department and the Department of Curriculum and Instruction. The requirements of both departments must be satisfied.

Students should make application for admission to student teaching for the spring semester by October 1 and for the fall semester by March 1 prior to the semester requested. Students must present scores on the Praxis II specialty area test equal to or greater than the state-established level in order to be approved for student teaching. Any questions concerning student teaching placement should be addressed to the Director of Teacher Education Student Services located in Crabaugh 109.

Professional requirements for the secondary education program include SEED 2002; SEED 3554, SEED 3702, SEED 4503, SEED 4556, and SEED 4809 or 4909. SEED 2002, SEED 3554, SEED 3702 and SEED 4556 must be completed prior to student teaching. Secondary teacher education candidates enrolling in student

teaching should register for SEED 4503 and either SEED 4809 or SEED 4909. In addition to the course requirements specified, the state also requires that the applicants for an Arkansas teaching license supply a copy of his/her score on the Praxis II (Principles of Learning and Teaching and Specialty Area Test). The Specialty Area Test is required for entry into student teaching. The Principles of Learning and Teaching may be completed during student teaching.

Student Teaching:

Student teaching is the capstone of the teacher preparation program. Placements are the responsibility of the **School of Education** and are selected on the basis of providing the best experience available for the student. The assignments require full day experiences for the semester. Students should make plans with these requirements in mind.

Praxis II

All candidates for licensure must meet minimum scores as required by Arkansas Department of Education on the Principles of Learning and Teaching and the appropriate specialty area test.

Please refer to Item E, Requirements for Baccalaureate Degrees, in the Graduation Requirements section of this catalog.

Curriculum in Early Childhood Education
Bachelor of Science Degree

Freshman Year		
First Semester		**Hours**
Algebra for General Education (MATH 1103)[1]		3
English Composition I (ENGL 1013)[1]		3
Science (BIOL 1014; PHSC 1013 & 1021; or GEOL 1004)		4
Introductory Sociology (SOC 1003)		3
Personal Health and Wellness (HLED 1513)		3
	Total	**16**
Second Semester		
Mathematical Concepts I (MATH 2033)		3
English Composition II (ENGL 1023)[1]		3
Science (BIOL 1014; PHSC 1013 & 1021; or GEOL 1004)		4
First Aid (PE 2513)		3
Public Speaking (SPH 2003)		3
	Total	**16**
Sophomore Year		
First Semester		
Mathematical Concepts II (MATH 2043)		3
U.S. History (HIST 2003 or HIST 2013)		3
American Government (POLS 2003)		3
Regional Geography of the World (GEOG 2013)		3
Introduction to Early Childhood Education (ECED 2001)[2]		1
Field-Based Experience Seminar in Early Childhood (ECED 2002)[2]		2
Physical Education[1]		1
	Total	**16**
Second Semester		
Foundations of Early Childhood (ECED 3023)[2]		3
Child Development (ECED 3033)[2]		3
Science (BIOL 1014; PHSC 1013 & 1021; or GEOL 1004)		4
Experiencing Art (ART 2123)		3
Technology in the Early Childhood Classroom (ECED 3013)		3
	Total	**16**

Curriculum in Early Childhood Education
Bachelor of Science Degree

Junior Year		
First Semester		
Developmentally Appropriate Practice (ECED 3043)[2]		3
Children and Families in a Diverse Society (ECED 3053)[2]		3
History of Arkansas (HIST 4153)		3
Humanities[1]		3
Science in Elementary and Middle School Education (BIOL 3003)		3
	Total	**15**
Second Semester		
Diagnosis and Assessment of Young Children I (ECED 3162)[2]		2
Guiding Young Children I (ECED 3172)[2]		2
Language and Literacy I (ECED 3183)[2]		3
Children's Literature I (ECED 3192)[2]		2
Integrated Curriculum I (ECED 3113)[2]		3
Practicum I (ECED 3122)[2]		2
Methods of Teaching Mathematics (MATH 3033)		3
	Total	**17**
Senior Year		
First Semester		
Diagnosis and Assessment of Young Children II (ECED 3262)[2]		2
Guiding Young Children II (ECED 3272)[2]		2
Language and Literacy II (ECED 3283)[2]		3
Children's Literature II (ECED 3292)[2]		2
Integrated Curriculum II (ECED 3213)[2]		3
Practicum II (ECED 3222)[2]		2
Physical Education[1]		1
	Total	**15**
Second Semester		
Early Childhood Education: Internship (ECED 4915)		15
	Total	**15**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Must be taken concurrently.

Curriculum in Middle Level Education
Curriculum in Mathematics and Science Licensure

Freshman Year	**Hours**
English Composition (ENGL 1013, 1023)[1]	6
World Civilization (HIST 1503, 1513)	6
Principles of Biology (BIOL 1114) or Principles of Zoology (BIOL 1124)	4
Principles of Botany (BIOL 1134)	4
College Algebra (MATH 1113)	3
Plane Trigonometry (MATH 1203)[2]	3
American Government (POLS 2003)	3
Introduction to Computer Based Systems (COMS 1003)	3
Introduction to Education (MLED 2001)	1
Total	**33**
Sophomore Year	
U.S. History (HIST 2003 or HIST 2013)	3
Fine Arts[1]	3
Essentials of Earth Science (GEOL 1004)	4
A Survey of Chemistry (CHEM 1114)	4

Curriculum in Middle Level Education
Curriculum in Mathematics and Science Licensure

Mathematical Concepts I (MATH 2033)		3
Mathematical Concepts II (MATH 2043)		3
Speech (SPH 2003 or 3083)		3
MATH Elective[2]		3
History of American Education (MLED 2011)		1
Physical Education[1]		2
	Total	**29**
Junior Year		
Humanities[1]		3
Applied Physics (PHYS 1114)		4
Introduction to Statistical Methods (MATH 2163)		3
Calculus for Business and Economics (MATH 2243) or Calculus I (MATH 2914)		3-4
Research Foundations (MLED 3012)		2
History of Arkansas (HIST 4153)		3
Nature and Needs of Middle Level Student (MLED 3023)		3
Literacy Development in the Middle Grades (MLED 3034)		4
Home-School Communication (MLED 3041)		1
School Law (MLED 3051)		1
Tests and Educational Measurements (MLED 3062)		2
Diversity in the Classroom (MLED 3071)		1
Instructional Technology (MLED 3081)		1
Psychological Foundations (MLED 3092)		2
Reading Through Literature in the Middle Grades (MLED 3102)		2
	Total	**35-36**
Senior Year		
Integrating Math and Science in Middle Level Education (MLMS 4406)		6
Teaching English as a Second Language (ENGL 4703)		3
Interdisciplinary Methods (MLED 4004)		4
Teaching Reading in the Content Area (MLED 4012)		2
Guided Field Experiences (MLED 4023)		3
Student Teaching (MLED 4912)		12
	Total	**30**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] MATH electives may not be MATH 1103 or MATH 3033.

Curriculum in Middle Level Education
Curriculum in English Language Arts/Social Studies Licensure

Freshman Year		**Hours**
English Composition (ENGL 1013, 1023)[1]		6
World Civilization (HIST 1503, 1513)		6
Biological and Physical Sciences[1]		8
Algebra for General Education (MATH 1103)[1]		3
Mathematical Concepts I (MATH 2033)		3
Regional Geography of the World (GEOG 2013)		3
Introduction to Education (MLED 2001)		1
Physical Education[1]		2
	Total	**32**
Sophomore Year		
U.S. History to 1865 (HIST 2003)		3
U.S. History from 1865 (HIST 2013)		3
Fine Arts[1]		3

Curriculum in Middle Level Education
Curriculum in English Language Arts/Social Studies Licensure

Humanities[1]		3
Essentials of Earth Science (GEOL 1004)		4
Speech (SPH 2003 or 3083)		3
American Government (POLS 2003)		3
English Elective (ENGL 2043, 2223, or 2263)		3
Principles of Economics I (ECON 2003)		3
Introduction to Computer Based Systems (COMS 1003)		3
History of Education in the United States (MLED 2011)		1
	Total	**32**
Junior Year		
Teaching English as a Second Language (ENGL 4703)		3
Advanced Composition: Practice and Theory (ENGL 3043)		3
History Elective (HIST 4463, 4603, 4703, or 4803)		3
Research in History (HIST 4963)		3
Research Foundations (MLED 3012)		2
Nature and Needs of Middle Level Student (MLED 3023)		3
Literacy Development in the Middle Grades (MLED 3034)		4
Home-School Communication (MLED 3041)		1
School Law (MLED 3051)		1
Tests and Educational Measurements (MLED 3062)		2
Diversity in the Classroom (MLED 3071)		1
Instructional Technology (MLED 3081)		1
Psychological Foundations (MLED 3092)		2
Reading Through Literature in the Middle Grades (MLED 3102)		2
	Total	**31**
Senior Year		
Systems of Grammar (ENGL 3013)		3
Modern American Literature (ENGL 3323)		3
History of Arkansas (HIST 4153)		3
Interdisciplinary Methods (MLED 4004)		4
Teaching Reading in the Content Area (MLED 4012)		2
Guided Field Experiences (MLED 4023)		3
Student Teaching (MLED 4912)		12
	Total	**30**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] MATH electives may not be MATH 1103 or MATH 3033.

Curriculum in Art
For Teacher Licensure[1,4]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[2]		6
Social Sciences[2]		6
Science[2]		8
Introduction to Drawing (ART 1303)		3
Two-Dimensional Design (ART 1403)		3
Introduction to Graphic Design (ART 1203)		3
Color Design (ART 2403)		3
	Total	**32**
Sophomore Year		
Anthropology (ANTH 2003)		3
Algebra for General Education (MATH 1103)[2,3]		3
Figure Drawing (ART 2303)		3
Personal Health and Wellness (HLED 1513)		3
Introduction to Secondary Education (SEED 2002)		2
Three-Dimensional Design (ART 2413)		3
Ceramics (ART 3603)		3
Fine Arts[2] (excludes ART 2123)		3
Painting (ART 2503 or 3533)		3
Physical Education[2]		3
American Government (POLS 2003)		3
	Total	**32**
Junior Year		
Humanities[2]		3
Speech (SPH 2003 or 3083)		3
Art History		3
Art Education I, K-12 (ART 3003)		3
Art Education II, K-12 (ART 3013)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Introduction to Printmaking (ART 3803)		3
Introduction to Sculpture (ART 2703)		3
Art Electives (3000-4000 level)		4
	Total	**31**
Senior Year		
Art History		3
Art Electives (3000-4000 level)		7
Special Methods in Art (ART 4701)		1
Classroom Application of Educational Psychology (SEED 4556)		6
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Elementary and Secondary School (SEED 4809)		9
	Total	**29**

[1]See major and general education statements under Art.
[2]See appropriate alternatives or substitutions in General Education requirements (Excludes ART 2123) (pgs. 78-80).
[3]Those who are not qualified for these courses must take in addition MATH 0903, or possibly both MATH 0803 and 0903.
[4]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Business Education
For Teacher Licensure[3]

Freshman Year		Fall	Spring
English Composition[1]		3	3
Science[1]		4	4
Personal Health and Wellness (HLED 1513)			3
Keyboarding II (BUAD 2002)		2	
College Algebra (MATH 1113)[2]		3	
Calculus for Business and Economics (MATH 2243)			3
American Government (POLS 2003)		3	
Principles of Word Processing (BUAD 2043)			3
Physical Education[1]		1	
	Total	**16**	**16**
Sophomore Year			
Communication and the Classroom Teacher (SPH 3083)		3	
Business Statistics (BUAD 2053)			3
Introduction to Secondary Education (SEED 2002)		2	
Business Information Systems (BUAD 2003)			3
Legal Environment of Business (BUAD 2033)		3	
U. S. History (HIST 2003 or 2013)[1]			3
Accounting Principles (ACCT 2003, 2013)		3	3
Principles of Economics (ECON 2003, 2013)		3	3
Physical Education[1]		1	1
	Total	**15**	**16**
Junior Year			
Fine Arts/Humanities[1]		3	3
Business Communications (BUAD 3023)		3	
Adolescent Development and Exceptionalities (SEED 3554)			4
Introduction to Educational Technology (SEED 3702)		2	
Management and Organizational Behavior (MGMT 3003)		3	
Vocational Business Education Elective			3
Principles of Marketing (MKT 3043)		3	
Production Management (MGMT 3103)			3
Cultural Anthropology (ANTH 2003)		3	
Methods of Vocational Business Education (VOBE 4023)			3
	Total	**17**	**16**
Senior Year			
Business Finance (FIN 3063)		3	
Classroom Application of Educational Psychology (SEED 4556)		6	
Management Information Systems (MGMT 4013)		3	
Business Policy (MGMT 4083)		3	
Special Methods in Vocational Business (VOBE 4701)			1
Teaching in the Elementary and Secondary School/			
Teaching in the Secondary School (SEED 4809/4909)			9
Seminar in Secondary Education (SEED 4503)			3
	Total	**15**	**13**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

[2]Students who have two years of high school algebra with a grade of "C" or better and a math ACT score of 22 or above may omit College Algebra and enroll directly in Math 2243, Calculus for Business and Economics. If omitted, an additional 3 hours of electives will be required.

[3]For teacher licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education. In addition to fulfilling teacher licensure requirements, students may fulfill requirements for endorsements in (1) Computer technology by completing 6 additional hours including a Computer Programming and a Computer Elective which is a 2000-level course or above, and (2) Vocational Education by completing 2 additional hours of approved Vocational Education courses.

Curriculum in Creative Writing
For Teacher Licensure[3]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[1]		6
Science[1]		8
Social Sciences[1]		6
Algebra for General Education (MATH 1103)[1]		3
Physical Education[1]		2
Practicum: Literary Journal Publication (ENGL 2881)[4]		1
Beginning Foreign Language I and II[5]		6-8
	Total	**32-34**
Sophomore Year		
American Government (POLS 2003)		3
Introduction to World Literature (ENGL 2003)		3
Fine Arts[1]		3
Physical Education[1]		1
Cultural Anthropology (ANTH 2003)		3
Creative Writing: Form and Theory (ENGL 2043)		3
Methods of Research (ENGL 2513)		3
Systems of Grammar (ENGL 3013)		3
Practicum: Literary Journal Publication (ENGL 2881)[4]		1
Intermediate Foreign Language I and II[5]		6-8
Introduction to Secondary Education (SEED 2002)		2
	Total	**31-33**
Junior Year		
Personal Health and Wellness (HLED 1513)		3
Introduction to Linguistics (ENGL 3023)		3
Advanced Composition (ENGL 3043)		3
Creative Writing Workshop: Fiction (ENGL 3083)		3
Creative Writing Workshop: Poetry (ENGL 3093)		3
American Literature to 1900 (ENGL 3313)		3
Modern American Literature (ENGL 3323)		3
British Literature to 1800 (ENGL 3413)		3
British Literature since 1800 (ENGL 3423)		3
Practicum: Editing the Literary Journal (ENGL 4881-4)[4]		1
Introduction to Educational Technology (SEED 3702)		2
Adolescent Development and Exceptionalities (SEED 3554)		4
	Total	**34**
Senior Year		
Creative Writing Seminar (ENGL 4093)		3
Teaching English in the Secondary School (ENGL 4733)		3
Communication and the Classroom Teacher (SPH 3083)		3
Classrooom Application of Educational Psychology (SEED 4556)		6
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Total	**27**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Any 2-4000-level English course excluding English 2003, 2013, 2113, 2173, and 2881.
[3]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.
[4]Students must complete a minimum of three semester hours selected from ENGL 2881 and/or ENGL 4881-4.
[5]All minimum college hours (at least four semesters) should be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.

Curriculum in English
For Teacher Licensure[3]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[1]		6
Science[1]		8
Social Sciences[1]		6
Algebra for General Education (MATH 1103)[1]		3
Physical Education[1]		2
Beginning Foreign Language I and II[4]		6-8
	Total	**31-33**
Sophomore Year		
American Government (POLS 2003)		3
Physical Education[1]		1
Methods of Research (ENGL 2513)		3
Fine Arts[1]		3
Intermediate Foreign Language I and II[4]		6-8
English Electives[2]		6
Introduction to Secondary Education (SEED 2002)		2
Cultural Anthropology (ANTH 2003)		3
Introduction to World Literature (ENGL 2003)		3
	Total	**30-32**
Junior Year		
Personal Health and Wellness (HLED 1513)		3
Systems of Grammar (ENGL 3013)		3
Introduction to Linguistics (ENGL 3023)		3
Advanced Composition (ENGL 3043)		3
American Literature to 1900 (ENGL 3313)		3
Modern American Literature (ENGL 3323)		3
British Literature to 1800 (ENGL 3413)		3
British Literature since 1800 (ENGL 3423)		3
Communication and the Classroom Teacher (SPH 3083)		3
Introduction to Educational Technology (SEED 3702)		2
Adolescent Development and Exceptionalities (SEED 3554)		4
	Total	**33**
Senior Year		
English Elective (3000-4000 level)		3
Elective		0-3
History of the English Language (ENGL 4013)		3
Teaching English in the Secondary School (ENGL 4733)		3
Classroom Application of Educational Psychology (SEED 4556)		6
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Total	**27-30**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

[2] Any 2-4000 level English courses excluding English 2003, 2013, 2173, and 2881.

[3]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching as determined by the Arkansas Department of Education.

Students who plan to add English as a second area of licensure must complete the following courses or their equivalents: Advanced Composition, 3 semester hours; Systems of Grammar, 3 semester hours; American Literature, 6 semester hours. British Literature, 6 semester hours; English electives, 6 semester hours. These requirements are subject to change.

Teachers who are certified in English and who have six semester hours in Journalism will be approved to teach Journalism.

Teachers who are certified in English and who have nine semester hours in speech will be endorsed to teach speech.

[4]All minimum college hours (at least four semesters) should be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.

Curriculum in Foreign Language with Concentration in French, German, or Spanish For Teacher Licensure[2,3]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[1]		6
Science[1]		8
Social Sciences[1]		6
Algebra for General Education (MATH 1103)[1]		3
Physical Education[1]		1
Beginning Language (FR, GER, or SPAN 1014, 1024)[3]		8
	Total	**32**
Sophomore Year		
Intermediate Language I and II (FR, GER, or SPAN 2014, 2024)[3]		8
American Government (POLS 2003)		3
Introduction to Secondary Education (SEED 2002)		2
Personal Health and Wellness (HLED 1513)		3
Physical Education[1]		2
Communication and the Classroom Teacher (SPH 3083)		3
Electives		9
	Total	**30**
Junior Year		
Fine Arts (ART 2123 or MUS 2003, or TH 2273)[1]		3
Humanities (ENGL 2003 or ENGL 2013)		3
Conversation and Composition I and II (FR, GER, or SPAN 3003 and 3013)		6
Introduction to Linguistics (FR, GER, or SPAN 3023)		3
Foreign Language Literature (FR, GER, or SPAN 4213)		3
Culture and Civilization (FR, GER 3113, SPAN 3123 or 3133)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Cultural Anthropology (ANTH 2003)		3
	Total	**30**
Senior Year		
Foreign Language Literature (FR, GER, or SPAN 4223)		3
Classroom Application of Educational Psychology (SEED 4556)		6
Foreign Language Teaching Methods (FR, GER, or SPAN 4703)		3
Special Methods (FR, GER, or SPAN 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
Electives		7
	Total	**32**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

[2] For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education. Students who plan to add French, German, or Spanish as a second area of licensure must complete the following courses or their equivalents: FR/GER/SPAN 1014, 1024, 2014, 2024, 4703, and 4213 or 4223, FR/GER 3113 or SPAN 3123 or 3133. These requirements are subject to change.

[3] Four semesters must be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.

Curriculum in History
For Teacher Licensure[3]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[1]		6
World Civilization (HIST 1503, 1513)		6
Science (BIOL 1014, PHSC 1013, 1021)[1]		8
Mathematics (MATH 1103 or 1113)[1]		3
Physical Education[1]		2
Regional Geography of the World (GEOG 2013)		3
Principles of Economics I (ECON 2003)		3
	Total	**31**
Sophomore Year		
U.S. History to 1865 (HIST 2003)		3
U.S. History since 1865 (HIST 2013)		3
American Government (POLS 2003)		3
Geography Elective		3
Cultural Anthropology (ANTH 2003)		3
Personal Health and Wellness (HLED 1513)		3
Introduction to Secondary Education (SEED 2002)		2
Speech (SPH 2003 or 3083)		3
Physical Education[1]		1
Electives		6
	Total	**30**
Junior Year		
Humanities (PHIL 2003)		3
Fine Arts[1]		3
History/Political Science		3
History/Political Science (3000-4000 level)[2]		6
History of Arkansas (HIST 4153)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
American State and Local Government (POLS 3033)		3
Electives		6
	Total	**33**
Senior Year		
Research in History (HIST 4963) or Research in Political Science (POLS 4963)		3
History/Political Science (3000-4000 level)[2]		6
Classroom Application of Educational Psychology (SEED 4556)		6
Social Studies Methods for Secondary Teachers (HIST 4713)		3
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Total	**30**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Twelve hours of history must be in U.S. History, including HIST 2003 and HIST 4153.
[3]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Mathematics
For Teacher Licensure[2]

Freshman Year		Hours
English/Composition (ENGL 1013, 1023)[1]		6
Social Science[1]		6
Calculus I, II (MATH 2914, 2924)		8
Personal Health and Wellness (HLED 1513)		3
Physical Education[1]		2
Foundations of Computer Programming I (COMS 2103)		3
Biological Science with lab[1]		4
	Total	**32**
Sophomore Year		
Cultural Anthropology (ANTH 2003)		3
Calculus III (MATH 2934)		4
Discrete Mathematics (MATH 2703)		3
Applied Statistics I (MATH 3153)		3
Fine Arts/Humanities[1]		6
American Government (POLS 2003)		3
Introduction to Secondary Education (SEED 2002)		2
General Physics I, II (PHYS 2114, 2124)		8
	Total	**32**
Junior Year		
Differential Equations I (MATH 3243)		3
Intro to Analysis (MATH 3203)		3
College Geometry (MATH 3123)		3
Math Modeling I (MATH 3163)		3
Special Methods in Mathematics (MATH 4703)		3
Speech (SPH 2003 or 3083)		3
Linear Algebra I (MATH 4003)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Electives		4
	Total	**31**
Senior Year		
Abstract Algebra I (MATH 4033)		3
Math Modeling II (MATH 4163)		3
History of Mathematics (MATH 4113)		3
Classroom Application of Educational Psychology (SEED 4556)		6
Teaching Practicum (MATH 4772)		2
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Total	**29**

[1]See General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Music Education For Teacher Licensure[4, 5]
(Instrumental Music Option)

Freshman Year		Hours
Recital Attendance (MUS 1000)[1]		0
Applied Music (MUS 1__2)[1]		4
Class Piano I, II (MUS 1441)[3] or Piano (MUS 1201)[1]		0-2
Stringed Instruments (MUS 1481)		1
Band (1501)[1]		2
Music Theory I, II (MUS 1713, 1723)		6
Ear Training I, II (MUS 1731, 1741)		2
Class Voice (MUS 2441) or Choir (MUS 1571)		1
English Composition I, II (ENGL1013, 1023)[2]		6
Algebra for General Education (MATH 1103)[2]		3
Physical Education[2]		2
Personal Health and Wellness (HLED 1513)		3
	Total	**30-32**
Sophomore Year		
Recital Attendance (MUS 1000)[1]		0
Applied Music (MUS 1__2)[1]		4
Class Piano III, IV (MUS 1441)[3] or Piano (MUS 1201)[1]		0-2
Band (1501)[1]		2
Woodwind Instruments (MUS 2421, 2431)		2
Music Theory III, IV (MUS 2713, 2723)		6
Ear Training III, IV (MUS 2731, 2741)		2
Science[2]		8
Public Speaking (SPH 2003) or Communication and the Classroom Teacher (SPH 3083)		3
Introduction to Secondary Education (SEED 2002)		2
Physical Education[2]		1
	Total	**30-32**
Junior Year		
Recital Attendance (MUS 3000)[1]		0
Brass Instruments (MUS 3401)		1
Applied Music (MUS 3__2)[1]		4
Secondary Instrumental Methods and Materials I (MUS 3281)		1
Band (3501)[1]		2
History of Music I, II (MUS 3773, 3783)		6
Principles of Conducting (MUS 3802)		2
Percussion Instruments (MUS 4461)		1
People and Cultures of the World (ANTH 2003)		3
American Government (POLS 2003)		3
Fine Arts[2]		3
Social Science[2]		3
Educational Technology (SEED 3702)		2
	Total	**31**
Senior Year		
Counterpoint (MUS 3712)		2
Orchestration (MUS 3762)		2
History of Music III (MUS 3793)		3
Music in the Elementary Classroom (MUS 3853)		3
Senior Recital (MUS 4001)		1
Secondary Instrumental Methods and Materials II (MUS 4281)		1
Form Analysis (MUS 4712)		2
Humanities[2]		3

Curriculum in Music Education For Teacher Licensure[4, 5] (Instrumental Music Option)

Social Science[2]		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Educational Psychology (SEED 4556)		6
	Total	**30**
Senior 9th Semester		
Special Methods in Music (MUS 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Elementary and Secondary School (PK-12) (SEED 4809)		9
	Total	**13**

[1]This course will be taken every semester.
[2]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[3]Students demonstrating acceptable proficiencies may be exempted from the piano requirement.
[4]For licensure, students must pass the Praxis II speciality area exams.
[5]Keyboard majors wishing to certify will be advised by the music department head to determine appropriate courses.

Curriculum in Music Education For Teacher Licensure [4] (Vocal Music Option)

Freshman Year		**Hours**
Recital Attendance (MUS 1000)[1]		0
Applied Music (MUS 1231)[1]		2
Italian Diction (MUS 1241, 1251)		2
Class Piano I, II (MUS 1441)[3] or Piano (MUS 1201)[1]		0-2
Stringed Instruments (MUS 1481)		1
University Choir (MUS 1571)[1] or Concert Chorale (MUS 1681)[1]		2
Music Theory I, II (MUS 1713, 1723)		6
Ear Training I, II (MUS 1731, 1741)		2
English Composition I, II (ENGL1013, 1023)[2]		6
Algebra for General Education (MATH 1103)[2]		3
Physical Education[2]		2
Personal Health and Wellness (HLED 1513)		3
	Table	**29-31**
Sophomore Year		
Recital Attendance (MUS 1000)[1]		0
Applied Music (MUS 1231)[1]		2
Class Piano III, IV (MUS 1441)[3] or Piano (MUS 1201)[1]		0-2
University Choir (MUS 1571)[1] or Concert Chorale (MUS 1681)[1]		2
German Diction (MUS 2241)		1
French Diction (MUS 2251)		1
Woodwind Instruments (MUS 2421)		1
Music Theory III, IV (MUS 2713, 2723)		6
Ear Training III, IV (MUS 2731, 2741)		2
Brass Instruments (MUS 3401)		1
Science[2]		8
Public Speaking (SPH 2003) or Communication and the Classroom Teacher (SPH 3083)		3
Introduction to Secondary Education (SEED 2002)		2
Physical Education[2]		1
	Table	**30-32**
Junior Year		
Recital Attendance (MUS 3000)[1]		0
Applied Music (MUS 3232)[1]		4
University Choir (MUS 3571)[1] or Concert Chorale (MUS 3681)[1]		2
History of Music I, II (MUS 3773, 3783)		6

Curriculum in Music Education For Teacher Licensure [4]
(Vocal Music Option)

Principles of Conducting (MUS 3802)		2
Secondary Choral Methods and Materials I (MUS 3821)		1
Percussion Instruments (MUS 4461)		1
Vocal Solo Literature and Pedagogy (MUS 4832)		2
Educational Technology (SEED 3702)		2
American Government (POLS 2003)		3
Peoples and Cultures of the World (ANTH 2003)		3
Fine Arts[2]		3
Social Science[2]		3
	Table	**32**
Senior Year		
Counterpoint (MUS 3712)		2
Orchestration (MUS 3762)		2
History of Music III (MUS 3793)		3
Music in the Elementary Classroom II (MUS 3853)		3
Senior Recital (MUS 4001)		1
Form Analysis (MUS 4712)		2
Secondary Choral Methods and Materials II (MUS 4821)		1
Adolescent Development and Exceptionalities (SEED 3554)		4
Educational Psychology (SEED 4556)		6
Social Science[2]		3
Humanities[2]		3
	Table	**30**
Senior 9th Semester		
Special Methods in Music (MUS 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Elementary and Secondary School (PK-12) (SEED 4809)		9
	Table	**13**

[1]This course will be taken every semester.
[2]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[3]Students demonstrating acceptable proficiencies may be exempted from the piano requirement.
[4]For licensure, students must pass the Praxis II speciality area exams.

Curriculum in Life Science and Earth Science
For Teacher Licensure[1]

Freshman Year		Hours
General Chemistry (CHEM 2124, 2134)		8
Principles of Biology (BIOL 1114)		4
Principles of Zoology (BIOL 1124)		4
English Composition (ENGL 1013, 1023)[2]		6
Personal Health and Wellness (HLED 1513)		3
College Algebra (MATH 1113)		3
Social Sciences[2]		3
Activity course[2]		2
	Table	**33**
Sophomore Year		
Principles of Botany (BIOL 1134)		4
Principles of Ecology (BIOL 3114)		4
Physical Geology (GEOL 1014)		4
Physical Principles (PHYS 2014, 2024)		8
Mathematics[3]		3
American Government (POLS 2003)		3
Cultural Anthropology (ANTH 2003)		3
Introduction to Secondary Education (SEED 2002)		2
	Table	**31**
Junior Year		
Fundamentals of Organic Chemistry (CHEM 3254)		4
Genetics (BIOL 3034)		4
General Physiology (BIOL 3124)		4
Meteorology (PHSC 3033)		3
Astronomy (PHSC 3053)		3
Calculus (MATH 2243 or equivalent calculus course)		3
Fine Arts/Humanities[2]		3
Social Sciences[2]		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
	Table	**33**
Senior Year		
Science Education in the Secondary School (BIOL 3013)		3
Cell Biology (BIOL 4033)		3
Biology Seminar (BIOL 4891)		1
Special Methods in Biology (BIOL 4701)		1
Fine Arts/Humanities[2]		3
Speech (SPH 2003 or 3083)		3
Seminar in Secondary Education (SEED 4503)		3
Classroom Application of Educational Psychology (SEED 4556)		6
Teaching in the Secondary School (SEED 4909)		9
	Table	**32**

[1]For licensure, students must achieve the minimum score on the Praxis Programs Specialty Area and Professional Knowledge Tests as determined by the Arkansas Department of Education.
[2]See General Education requirements (pgs. 78-80).
[3]Must be above MATH 1113 and statistics (MATH 2163 or equivalent) or trigonometry (MATH 1203) are suggested.

Curriculum in Physical Science and Earth Science For Teacher Licensure (Chemistry Option)[2]

Freshman Year	Hours
Orientation to Physical Sciences (PHSC 1001)	1
English Composition (ENGL 1013, 1023)[1]	6
College Algebra (MATH 1113) or Precalculus (MATH 1913)	3
Physical Education[1]	2
Introduction to Biological Science (BIOL 1014)	4
Biology Electives[1]	4
General Chemistry (CHEM 2124, 2134)	8
Calculus I (MATH 2914)	4
Table	**32**
Sophomore Year	
Calculus II (MATH 2924)	4
Social Sciences[1]	3
Physical Education[1]	1
Microcomputer Applications (COMS 2003) or Foundations of Computer Programming (COMS 2103)	3
Physical Geology (GEOL 1014)	4
Introduction to Secondary Education (SEED 2002)	2
Communication and the Classroom Teacher (SPH 3083)	3
Fundamentals of Organic Chemistry (CHEM 3254)	4
Quantitative Analysis (CHEM 3245)	5
Personal Health and Wellness (HLED 1513)	3
Table	**32**
Junior Year	
Social Sciences[1]	3
Physical Principles (PHYS 2014, 2024)	8
Environmental Chemistry (CHEM 2143)	3
Adolescent Development and Exceptionalities (SEED 3554)	4
Introduction to Educational Technology (SEED 3702)	2
Cultural Anthropology (ANTH 2003)	3
Astronomy (PHSC 3053)	3
Meteorology (PHSC 3033)	3
Table	**29**
Senior Year	
American Government (POLS 2003)	3
Fine Arts/Humanities[1]	6
Classroom Application of Educational Psychology (SEED 4556)	6
Principles of Biochemistry (CHEM 3343)	3
Science Education in the Secondary School (PHSC 3013)	3
Special Methods in Physical Science (PHSC 4701)	1
Seminar in Secondary Education (SEED 4503)	3
Teaching in the Secondary School (SEED 4909)	9
Table	**34**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Physical Science and Earth Science For Teacher Licensure (Geology Option)[2]

Freshman Year		Hours
Orientation to Physical Science (PHSC 1001)		1
English Composition (ENGL 1013, 1023)[1]		6
College Algebra (MATH 1113) or Precalculus (MATH 1913)		3
Physical Education[1]		2
Introduction to Biological Science (BIOL 1014)		4
General Chemistry (CHEM 2124, 2134)		8
Trigonometry (MATH 1203)		3
Physical Geology (GEOL 1014)		4
Personal Health and Wellness (HLED 1513)		3
	Table	**34**
Sophomore Year		
Social Sciences[1]		6
Physical Education[1]		1
Introduction to Secondary Education (SEED 2002)		2
Communication and the Classroom Teacher (SPH 3083)		3
Historical Geology (GEOL 2024)		4
Calculus for Business and Economics (MATH 2243)		3
Mineralogy (GEOL 3104)		4
Microcomputer Applications (COMS 2003)		3
American Government (POLS 2003)		3
Fine Arts[1]		3
	Table	**32**
Junior Year		
Structural Geology (GEOL 3004)		4
Petrology (GEOL 3164)		4
Humanities[1]		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Astronomy (PHSC 3053)		3
Meteorology (PHSC 3033)		3
Physical Principles (PHYS 2014, 2024)		8
	Table	**31**
Senior Year		
Classroom Application of Educational Psychology (SEED 4556)		6
Cultural Anthropology (ANTH 2003)		3
Fundamentals of Organic Chemistry (CHEM 3254), Modern Physics (PHYS 3213)or upper level Physics elective		3-4
Science Education in the Secondary School (PHSC 3013)		3
Environmental Geology (GEOL 3153)		3
Special Methods in Physical Science (PHSC 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Table	**31-32**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Physical Science and Earth Science For Teacher Licensure (General Option)[2]

Freshman Year		Hours
Orientation to Physical Sciences (PHSC 1001)		1
English Composition (ENGL 1013, 1023)[1]		6
College Algebra (MATH 1113)		3
Physical Education[1]		2
General Chemistry (CHEM 2124, 2134)		8
Trigonometry (MATH 1203)		3
Physical Geology (GEOL 1014)		4
Introduction to Biological Sciences (BIOL 1014)		4
Personal Health and Wellness (HLED 1513)		3
	Table	**34**
Sophomore Year		
Social Sciences[1]		6
Physical Education[1]		1
Introduction to Secondary Education (SEED 2002)		2
Communication and the Classroom Teacher (SPH 3083)		3
Calculus I (MATH 2914)		4
General Physics (PHYS 2114, 2124)		8
American Government (POLS 2003)		3
Historical Geology (GEOL 2024)		4
Elective		1
	Table	**32**
Junior Year		
Calculus II (MATH 2924)		4
Environmental Geology (GEOL 3153)		3
Fundamentals of Organic Chemistry (CHEM 3254)		4
Modern Physics (PHYS 3213)		3
Physics Elective		1
Foundations of Computer Programming I (COMS 2103) or Microcomputer Applications (COMS 2003)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Astronomy (PHSC 3053)		3
Fine Arts/Humanities[1]		3
	Table	**30**
Senior Year		
Fine Arts/Humanities[1]		3
Meteorology (PHSC 3033)		3
Classroom Application of Educational Psychology (SEED 4556)		6
Cultural Anthropology (ANTH 2003)		3
Science Education in the Secondary School (PHSC 3013)		3
Special Methods in Physical Science (PHSC 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Table	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Physical Science and Earth Science For Teacher Licensure (Physics Option)[2]

Freshman Year		Hours
Orientation to Physical Sciences (PHSC 1001)		1
English Composition (ENGL 1013, 1023)[1]		6
Physical Education[1]		1
College Algebra (MATH 1113) or Precalculus (MATH 1913)		3
General Chemistry (CHEM 2124, 2134)		8
Calculus I (MATH 2914)		4
Introduction to Biological Sciences (BIOL 1014)		4
Social Sciences[1]		3
Personal Health and Wellness (HLED 1513)		3
	Table	**33**
Sophomore Year		
Social Sciences[1]		3
Cultural Anthropology (ANTH 2003)		3
Physical Education[1]		2
Introduction to Secondary Education (SEED 2002)		2
Communication and the Classroom Teacher (SPH 3083)		3
Calculus II (MATH 2924)		4
Calculus III (MATH 2934)		4
American Government (POLS 2003)		3
General Physics (PHYS 2114, 2124)		8
	Table	**32**
Junior Year		
Fine Arts/Humanities[1]		3
Physical Geology (GEOL 1014)		4
Foundations of Computer Programming I (COMS 2103) or Microcomputer Applications (COMS 2003)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Differential Equations (MATH 3243)		3
Modern Physics (PHYS 3213)		3
Mechanics (PHYS 3023)		3
Electricity and Magnetism (PHYS 3133)		3
Electric Circuits I (ENGR 2103)		3
	Table	**31**
Senior Year		
Fine Arts/Humanities[1]		3
Classroom Application of Educational Psychology (SEED 4556)		6
Science Education in the Secondary School (PHSC 3013)		3
Meteorology (PHSC 3033)		3
Astronomy (PHSC 3053)		3
Special Methods in Physical Science (PHSC 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Table	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles and Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Speech
For Teacher Licensure[2,3]

Freshman Year		Hours
English Composition (ENGL 1013, 1023)[1]		6
World Civilization (HIST 1503, 1513)		6
Science[1]		8
Algebra for General Education (MATH 1103)[1]		3
Public Speaking (SPH 2003)		3
Physical Education[1]		2
Introduction to Speech-Communication (SPH 1003)		3
	Table	**31**
Sophomore Year		
Personal Health and Wellness (HLED 1513)		3
Electives		9
Physical Education[1]		1
American Government (POLS 2003)		3
Voice and Diction (SPH 2013)		3
Introduction to Education (SEED 2002)		2
Acting Theories and Techniques (TH 2703)[4]		3
Group Discussion (SPH 3073)		3
Introduction to Mass Communication (JOUR 2133)[4]		3
	Table	**30**
Junior Year		
Humanities[1]		3
Fine Arts[1]		3
Oral Interpretation (SPH 3063)		3
Stagecraft Techniques (TH 3513)[4]		3
Directing Theories and Techniques (TH 3803)[4]		3
Debate Practicum (SPH 2111, 2121)[4]		2
Cultural Anthropology (ANTH 2003)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Electives		5
	Table	**31**
Senior Year		
Classroom Application of Educational Psychology (SEED 4556)		6
Theatre History I or II (TH 4263 or 4273)		3
Directing Forensics (SPH 4073)		3
Electives in Speech and Theatre		1
Electives		7
Special Methods in Speech (SPH 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Secondary School (SEED 4909)		9
	Table	**33**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]See minor requirements under Speech.
[3]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.
[4]Check with advisor for appropriate substitutions.
Teachers who are certified in Speech can also be endorsed to teach English with nine additional hours beyond the 124 hour degree requirement.

Selected Second Teaching Fields

Students are encouraged to meet at least minimum licensure requirements in a second field of teaching in addition to their major field of study. Information pertaining to second teaching fields is available in the office of the Dean of Education.

Students desiring secondary licensure in library media should complete the requirements listed in the Graduate Catalog under the Master of Education degree with specialization in instructional technology.

Department of Health and Physical Education

Dr. M. Annette Holeyfield, Head
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(501) 968-0344
Annette.Holeyfield@mail.atu.edu

Professors: Cadle
Associate Professor: Holeyfield, Jackson
Assistant Professors: Kirkpatrick, Taylor
Instructors: Brown, Foley, Goss, Hornor, Mullins, Pinion, Ricono, Thompson

The Department of Health and Physical Education is a nationally accredited department that is a part of the University core curriculum and the School of Education professional preparation program curricula designed to serve the students, faculty and staff of Arkansas Tech University.

The programs in the Department of Health and Physical Education are designed to prepare students for lifelong growth in the physical, intellectual, cultural, emotional and social dimensions. These goals and objectives are met through the qualified faculty's presentation of research-based information, utilizing the latest technology.

The Department of Health and Physical Education offers the following degree tracks:

1. Wellness/Fitness Program Management: This track serves students who want to pursue professional preparation in the broad area of Wellnessand Fitness Program Management. This would include those students who desire to work in clinical based, commercial and/or corporate settings.
2. Health and Physical Education Teacher Licensure: This track serves students who want to teach K-12 Health and Physical Education, with a coaching endorsement.

Driver Education Program

The driver education program has been designed to serve individuals preparing to be driver and traffic education teachers.

Additional information about this summer program may be obtained by calling 968-0344.

Curriculum in Health and Physical Education[2] (Including Teacher Licensure Requirements)

Freshman Year	Fall	Spring
English Composition (ENGL 1013, 1023)[1]	3	3
Science (BIOL 1014, PHSC 1013, PHSC 1021)[1]	4	4
Algebra (MATH 1103)[1]	3	
Personal Health and Wellness (HLED 1513)	3	
Orientation to Health, Physical Education and Wellness (PE 1201)	1	
Computer Science (COMS 1003 or equivalent)	3	
Methods of Teaching Individual Activities (PE 2111)		1
Regional Geography of the World (GEOG 2013)[1]		3
First Aid (PE 2513)		3
Physical Wellness and Fitness (WS 1002)		2
Total	**17**	**16**
Sophomore Year		
History of the U.S. to 1865 (HIST 2003)[1]	3	
American Government (POLS 2003)	3	
Speech (SPH 2003 or 3083)	3	
Anatomy and Physiology (PE 2653)	3	
Methods of Teaching Rhythmic and Gymnastic Movements (PE 3101)	1	
Methods of Teaching Team Activities (PE 2101)	1	
Foundations in Health and Physical Education (PE 2523)	3	
Experiencing Art (ART 2123)[1]		3
Cultural Anthropology (ANTH 2003)		3
Introduction to World Literature (ENGL 2003)[1]		3
Kinesiology (PE 3663)		3

Curriculum in Health and Physical Education[2] (Including Teacher Licensure Requirements)

Laboratory Experiences in Anatomy/Physiology and Kinesiology (PE 3661)		1
Methods of Teaching Fitness and Wellness Concepts (PE 3051)		1
Introduction to Education (SEED 2002)		2
Total	**17**	**16**
Junior Year		
Methods of Teaching Movement Patterns and Activities for Children (PE 3103)	3	
Coaching Theory (PE 3413)	3	
Prevention and Care of Athletic Injuries (PE 3573)	3	
Basic Exercise Physiology (PE 4033)	3	
Nutrition and Physical Fitness (HLED 4403)	3	
Methods and Materials in Physical Education and Recreation for Kindergarten and Elementary Grades (PE 3583)		3
Coaching Strategy (PE 3512, 3522, or 3532)		2
Methods and Materials in Physical Education for Secondary Schools (PE 3603)		3
Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)	2	
Consumer Health Programs (HLED 3203)		3
Organization and Administration of Health and Physical Education (PE 4513)		3
Total	**17**	**18**
Senior Year		
Principles and Methods of Adapted Physical Education (PE 4103)	3	
Measurement and Evaluation in Health and Physical Education (PE 4523)	3	
Methods and Materials in Health for Grades K-12 (HLED 4303)	3	
Classroom Application of Educational Psychology (SEED 4556)	6	
Seminar in Secondary Education (SEED 4503)		3
Special Methods in Health and Physical Education (PE 4701)		1
Teaching in the Elementary and Secondary School (SEED 4809)[3]		9
Total	**15**	**13**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning Teaching Tests as determined by the Arkansas Department of Education.
[3]Three semester hours of the student teaching requirement must be completed at the elementary or middle school level, below the ninth grade, where the cooperative teacher is certified in Elementary Physical Education OR student must complete a three-semester-hour internship under direct supervision from the staff of the University's Physical Education Department.

Selected Second Teaching Fields

Students are encouraged to meet at least minimal licensure requirements in a second field of teaching in addition to their major field of study.

Licensure requirements in Driver Education are as follows: Hold or be qualified to hold a standard six-year secondary certificate; Driver Education I, two semester hours; Driver Education II, two semester hours; First Aid, two semester hours. Total of 6 semester hours.

Wellness and Fitness Program Management Option

There are three levels in the Wellness/Fitness Management program. Students begin the first level by taking general education requirements and are introduced to basic concepts of the wellness/fitness program in PE 1201,

Orientation to Health, Physical Education, and Wellness Science and WS 1002, Physical Wellness and Fitness.

During the second level, students complete general education requirements and take courses specific to the wellness profession. Admission to level two requires completion of PE1201, WS 1002, ENGL 1013, ENGL 1023, MATH 1103, BIOL 1014, and SPH 2173 with a grade of C or better.

The third level is the internship phase of the program. Admission to this level requires completion of all content area courses (HLED, PE, & WS) with a grade of "C" or better and a cumulative GPA of 2.00.

Curriculum in Health and Physical Education (Wellness and Fitness Program Management Option)

Freshman Year	Fall	Spring
English Composition (ENGL 1013, 1023)[1]	3	3
Science (BIOL 1014, PHSC 1013, PHSC 1021)[1]	4	4
Computer Science (COMS 1003 or equivalent)	3	
Algebra (MATH 1103)[1]	3	
Personal Health and Wellness (HLED 1513)	3	
Orientation to Health, Physical Education, and Wellness (PE 1201)	1	
Introductory Sociology (SOC 1003)[1]		3
First Aid (PE 2513)		3
Physical Wellness and Fitness (WS 1002)		2
Total	**17**	**15**
Sophomore Year		
History of the U. S. to 1865 (HIST 2003)[1]	3	
Business and Professional Speaking (SPH 2173)	3	
Anatomy and Physiology (PE 2653)	3	
Foundations of Health and Physical Education (PE 2523)	3	
Directing Food, Exercise and Body Composition Programs (WS 2031)	1	
Rhythmic Aerobic Activities (PE 2861)	1	
Field-Based Experience in Wellness (WS 2003)	3	
Experiencing Art (ART 2123)[1]		3
History of the U. S. since 1865 (HIST 2013)[1]		3
Introduction to World Literature (ENGL 2003)[1]		3
Kinesiology (PE 3663)		3
Laboratory Experiences in Anatomy/Physiology and Kinesiology (PE 3661)		1
Applied Fitness Assessment and Development (WS 2043)		3
Total	**17**	**16**
Junior Year		
Prevention and Care of Athletic Injuries (PE 3573)	3	
Basic Exercise Physiology (PE 4033)	3	
Principles of Economics I (ECON 2003)	3	
Directing Fitness Walking/Jogging Programs (WS 2091)	1	
Medical Terminology (AHS 2013)	3	
Management and Organizational Behavior (MGMT 3003)	3	
Consumer Health Programs (HLED 3203)		3
Directing Muscle Fitness Programs (WS 2081)		1
Exercise Behavior and Adherence (WS 3023)		3
Introduction to Hospitality Management (HA 1043)		3
Exercise Prescription (WS 3003)		3
Principles of Marketing (MKT 3043)		3
Total	**16**	**16**
Senior Year		
Wellness and Fitness Programming (WS 4063)	3	
Journalism (JOUR 1163 or 2133 or 2143)	3	
Principles and Methods of Adapted Physical Education (PE 4103)	3	
Advanced Professional Seminar (WS 4003)	3	
Nutrition and Physical Fitness (HLED 4403)	3	
Wellness and Fitness Program Management Internship (WS 4012)		12
Total	**15**	**12**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

SCHOOL OF LIBERAL AND FINE ARTS

Dr. Georgena Duncan, Dean
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The School of Liberal and Fine Arts comprises seven departments which offer programs of study leading to baccalaureate and associate degrees as listed below:

Bachelor of Arts
- Art
- Art Education
- English
- English Education
- Foreign Language
- Foreign Language Education
- General Studies
- History and Political Science
- History Education
- International Studies
- Journalism
- Music
- Music Education
- Psychology
- Rehabilitation Science
- Sociology
- Speech
- Speech Education

Bachelor of Fine Arts
- Creative Writing
- Creative Writing Education

Associate of Arts
- General Studies

The school also supervises pre-professional curricula in law and is extensively involved in the general education program.

Through these degree and pre-professional curricula, the departments in the School of Liberal and Fine Arts prepare graduates for a variety of challenging and rewarding careers, either directly or via continued graduate or professional studies. These curricula are designed not only to develop theoretical and technical expertise in the fine arts, humanities, and social sciences, but also to nurture the ability to think clearly and express ideas persuasively. Through its general education commitment and elective offerings, the school's faculty contributes to the broadening of the knowledge and experience of all graduates of Arkansas Tech University by promoting basic competence in communication skills, by fostering an appreciation and understanding of our cultural heritage and current world affairs, and by developing problem-solving techniques.

Associate of Arts in General Studies

The associate of arts degree program in general studies is designed primarily for continuing education students who enroll on a part-time basis in the University's evening school. This degree offers students the background,

knowledge, and academic preparation necessary to pursue career opportunities not requiring the traditional four-year degree while at the same time providing the foundation for continued study toward a bachelor's degree.

To qualify for the associate of arts in general studies, the student must satisfy the associate degree requirements as stated on page 77 of this catalog and complete the following curriculum:

Curriculum	Hours
General Education courses[1]	37-39
Electives	25-23
Total	62

[1]See General Education requirements (pgs. 78-80).

Bachelor of Arts in General Studies

The Bachelor of Arts in General Studies is designed primarily for students who wish a broad liberal arts degree, without a concentration in a discipline or preparation for a particular profession. The degree also suits students wishing to pursue a 4 year baccalaureate in order to obtain an education which will furnish them with good writing, analytical and/or speaking skills. The degree will furnish background for employment in a variety of business, governmental, and managerial careers. General Studies requires completion of a general core of classes, with an additional two emphasis blocks. Information on the classes available in the established blocks may be obtained from either the Dean of Liberal and Fine Arts or the Advising Center. Additional blocks will be developed in the future. Once the student has selected emphasis areas an advisor in one of the emphasis areas will be assigned for the degree.

The Bachelor degree in General Studies requires completion of 124 hours. In addition to completion of the stated General Education hours, a student must complete 12 hours in upper level Liberal Arts courses, 6 hours in computer/technology courses, two emphasis blocks of 12-18 hours per block, and 29-39 hours of electives. Current emphasis blocks include the following:

Graphic Design	Fine Arts
WritingHistory/Philosophy	Social Studies
Public Relations	Communication

Curriculum in General Studies

Freshman Year		**Hours**
English Composition (ENGL 1013,1023)[1]		6
Social Studies[1]		6
Science (BIOL 1014, PHSC 1013,1021)[1]		8
Algebra for General Education (MATH 1103 or 1113)[1]		3
Physical Education[1]		2
Electives		6
	Total	**31**
Sophomore Year		
Social Studies[1]		6
Humanities/Fine Arts[1]		6
Computer/Technology		6
General Studies Emphasis Block Courses[3]		9
Electives[2]		3
	Total	**30**
Junior Year		
General Studies Emphasis Block Courses[3]		15
Upper level Liberal Arts (3000-4000 level)[3]		3
Electives[2]		12
	Total	**30**
Senior Year		
Any Additional needed General Studies Emphasis Block Courses[3]		12
Upper level Liberal Arts (3000-4000 level)[3]		9
Electives[2]		12
	Total	**33**

[1]See appropriate alternatives or substitutions in General Education Requirements (pgs. 78-80).
[2]At least 40 of the total hours required for graduation must be 3000-4000 level courses.
[3]As specified by academic advisor.

Department of Art

Ron R. Reynolds, Head
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Ron.Reynolds@mail.atu.edu

Associate Professors:
Reynolds, Sullivan
Assistant Professors:
Brunson, Mudrinich

The Art Department has as its primary purpose the training and developing of artists. In so doing, the appreciation of art and the involvement in art become an integral part of the program. The objective is to help students become proficient in one or more of the many areas of visual communications.

The department has two major programs leading to the baccalaureate degree. The first, art education, provides the foundations in art necessary to enable the student to qualify and be certified as an art teacher in public and private schools from kindergarten through grade twelve. The second program, art, has two options--fine art and graphic design. The fine art option permits a student to concentrate on drawing, painting, printmaking, ceramics, sculpture, and other special art interests. The graphic design option enables a student to develop the skills and techniques required to engage in the various professional fields of advertising art. All three curricula lead to the bachelor of arts degree.

All art majors will enroll in a foundations core made up of ART 1303, Introduction to Drawing; ART 1403, Two-Dimensional Design; ART 2403, Color Design; ART 2413, Three-Dimensional Design, and ART 2303, Figure Drawing. Graphic design and art education students will be expected to include ART 1203, Introduction to Graphic Design, in their foundations core. These core courses may be taken independently of each other, and more than one may be taken in a semester. All art majors are required to enroll in six hours of World Art History, ART 2103 and 2113.

The Art Department also offers service courses required in the areas of general education and teacher licensure.

Curriculum in Art for Teacher Licensure[1,4]

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[2]		6
Social Sciences[2]		6
Science[2]		8
Introduction to Drawing (ART 1303)		3
Two-Dimensional Design (ART 1403)		3
Introduction to Graphic Design (ART 1203)		3
Color Design (ART 2403)		3
	Total	**32**
Sophomore Year		
Cultural Anthropology (ANTH 2003)		3
Algebra for General Education (MATH 1103)[2,3]		3
Figure Drawing (ART 2303)		3
Personal Health and Wellness (HLED 1513)		3
Introduction to Secondary Education (SEED 2002)		2
Three-Dimensional Design (ART 2413)		3
Ceramics (ART 3603)		3
Fine Arts[2] (excludes ART 2123)		3
Painting (ART 2503 or 3533)		3
Physical Education[2]		3
American Government (POLS 2003)		3
	Total	**32**
Junior Year		
Humanities[2]		3
Speech (SPH 2003 or 3083)		3
Art History		3
Art Education I, K-12 (ART 3003)		3
Art Education II, K-12 (ART 3013)		3

Curriculum in Art for Teacher Licensure[1,4]

Adolescent Development and Exceptionalities (SEED 3554)		4
Introduction to Educational Technology (SEED 3702)		2
Introduction to Printmaking (ART 3803)		3
Introduction to Sculpture (ART 2703)		3
Art Electives (3000-4000 level)		4
	Total	**31**
Senior Year		
Art History		3
Art Electives (3000-4000 level)		7
Special Methods in Art (ART 4701)		1
Classroom Application of Educational Psychology (SEED 4556)		6
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Elementary and Secondary School (SEED 4809)		9
	Total	**29**

[1]See major and general education statements under Art.
[2]See appropriate alternatives or substitutions in General Education requirements (Excludes ART 2123)
[3]Those who are not qualified for these courses must take in addition MATH 0903, or possibly both MATH 0803 and 0903.
[4]For licensure, students must achieve the minimum score on the Praxis II Specialty Area and Principles of Learning and Teaching Tests as determined by the Arkansas Department of Education.

Curriculum in Fine Art

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
Science[1]		8
Introduction to Drawing (ART 1303)		3
Two-Dimensional Design (ART 1403)		3
Three-Dimensional Design (ART 2413)		3
Color Design (ART 2403)		3
	Total	**32**
Sophomore Year		
Social Sciences[1]		6
Physical Education[1]		2
Algebra for General Education (MATH 1103)[1]		3
Figure Drawing (ART 2303)		3
Drawing Studio (ART 3303)		3
Ceramics (ART 3603)		3
Introduction to Printmaking (ART 3803)		3
Introduction to Sculpture (ART 2703)		3
Fine Arts[1]		3
Introduction to Opaque Painting (ART 2503) or Watercolor Painting (ART 3533)		3
	Total	**32**
Junior Year		
Art Electives (3000 - 4000 level)		3
Humanities[1]		3
Art History		6
Electives[2]1		2
Sculpture Studio I (ART 3703)		3
Art Electives (3000 - 4000 level)		3
	Total	**30**

Curriculum in Fine Art

Senior Year	
Art Electives (3000-4000 level)	9
Electives[2]	18
Senior Project and Exhibition (ART 4703)	3
Total	**30**

[1]See appropriate alternatives or substitutions in General Education requirements (Fine Arts requirement excludes ART 2123) (pgs. 78-80).
[2]At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.

Curriculum in Graphic Design

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Social Sciences[1]	6
Science[1]	4
Color Design (ART 2403)	3
Introduction to Graphic Design (ART 1203)	3
Applied Graphic Design (ART 2203)	3
Introduction to Drawing (ART 1303)	3
Two-Dimensional Design (ART 1403)	3
Total	**31**
Sophomore Year	
Social Sciences[1]	6
Science[1]	4
Algebra for General Education (MATH 1103)[1]	3
Figure Drawing (ART 2303)	3
Three-Dimensional Design (ART 2413)	3
Basic Advertising Art (ART 3213)	3
Introduction to Printmaking (ART 3803)	3
Fine Arts[1]	3
Humanities[1]	3
Physical Education[1]	2
Total	**33**
Junior Year	
Art History	6
Printmaking Studio I (ART 3813)	3
Graphic Design[2]	9
Electives[3]	12
Total	**30**
Senior Year	
Senior Project and Exhibition (ART 4703)	3
Art Electives (3000-4000 level)	9
Electives[3]	18
Total	**30**

[1] See appropriate alternatives or substitutions in General Education requirements (excludes ART 2123) (pgs. 78-80).
[2] Choose nine hours from these courses:
ART 3223, Three-Dimensional Advertising
ART 3233, Production Techniques
ART 4213, Advanced Advertising Art
ART 4233, Techniques for Illustration
[3] At least 40 hours of the total hour required for graduation must be 3000 - 4000 level courses.

Department of Behavioral Sciences

Dr. Lyman Harris, Head
Witherspoon Hall, Room 347
(501) 968-0305
Lyman.Harris@mail.atu.edu

Professors: Harris, Shry
Associate Professors: McLellan, Stewart-Abernathy, Titus
Assistant Professors: Gadberry, Martin, Moore, Ward, Wilkerson, Willmering

The Behavioral Sciences Department includes the allied disciplines of psychology, sociology, anthropology, criminal justice, and rehabilitation science. The student is offered the opportunity to develop an understanding of human behavior via the distinctive approach of each discipline as well as an integrated view of interpersonal, social, and cultural activities.

The department has several distinctive goals. It gives basic preparation which may lead to advanced study, it provides a career line for work in state and local agencies and programs, it provides practical experience and skills in human services, and it offers electives to support other programs of study in the University.

The student may select a major or minor in psychology, sociology, and rehabilitation science, or minor in anthropology or criminal justice.

While each area outlines a complete program below, one of the objectives of the department is to maintain maximum flexibility of planning with each student within the context of the broad range of offerings. Each student is encouraged to consult with a departmental advisor at the earliest opportunity to develop a program appropriate to his/her interests and goals.

Psychology

The psychology curriculum is designed to (1) prepare students for advanced study in psychology; (2) support, through electives, programs of study in other disciplines; (3) give a basis for entry into the job market; (4) arouse the curiosity of all students regarding human behavior; (5) provide opportunities for experiences outside the classroom by way of field programs and practical experiences.

The student majoring in psychology must, in addition to meeting the general education requirements:

a. Complete a minimum of 31 credits in psychology to include: (18 credits must be upper division).
   PSY 2003. General Psychology
   PSY 2053. Statistics for the Behavioral Sciences
   PSY 2074. Experimental Psychology

   The remainder of the major may be developed to reflect various career goals.

   If the student plans to go to graduate school, the following should be included: PSY 3053, PSY 3073, PSY 3153, PSY 4013, PSY 4033, PSY 4043.

   If the student plans to seek employment in applied human service settings, the following should be included: PSY 2033, PSY 3003, PSY/SOC 3013, PSY 3063, PSY 3153.

   If the student plans to seek employment in business, industry or organizational settings, the following should be included: PSY 2023, PSY 3093, PSY 4033, PSY 4043, PSY 4234[3].

b. Complete a minor of 15 credits in a second field of study designed to complement career objectives.

c. Complete Sociology 1003 and Anthropology 1213 or 2003.

Curriculum in Psychology

Freshman Year		Hours
English Composition I, II (ENGL 1013, 1023)[1]		6
Physical Science[1]		4
General Psychology (PSY 2003)		3
Social Sciences[1]		6
Physical Education[1]		2
Algebra for General Education (MATH 1103)[1]		3
Introductory Sociology (SOC 1003)		3
Electives		5
	Total	**32**
Sophomore Year		
Principles of Zoology (BIOL 1124) or Human Anatomy (BIOL 2014)[5]		4
Statistics for the Behavioral Sciences (PSY 2053)		3
Social Sciences[1]		6
Experimental Psychology (PSY 2074)		4
Psychology Electives		3
Electives[2]		8-12
	Total	**32**
Junior Year		
Fine Arts[1]		3
Humanities[1]		3
Anthropology (ANTH 1213 or 2003)		3
Psychology (3000-4000 level)		9
Minor		6
Electives[4]		6
	Total	**30**
Senior Year		
Psychology (3000-4000 level)		9
Minor		9
Electives[4]		12
Total		30

[1] See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] Those planning graduate work are urged to consider a foreign language.
[3] PSY 4234 requires professional/student liability insurance.
[4] At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.
[5] If a student has already completed BIOL 1014, they may substitute BIOL 2004 for BIOL 1124 or BIOL 2014 as a Psychology requirement.

Rehabilitation Science

Dr. Penny Willmering, Director

The Rehabilitation Science curriculum is designed to produce undergraduate rehabilitation generalists who have training and experience conducive to successful careers in various rehabilitation service programs. There are five groups of students to whom the rehabilitation science curriculum will appeal: (1) those who wish to prepare for rehabilitation counseling, (2) those who wish to prepare for vocational evaluator and employment counselor careers, (3) those who wish to prepare for social caseworker careers, (4) those who desire to build a strong foundation for more intensive specialization at the graduate level in any of the rehabilitation services careers, and (5) those who are majoring in related disciplines such as psychology, sociology, education, nursing, and recreation who are concerned about the "human dimensions" of the populations to which they relate.

The primary objective of the program is to develop personnel for careers with state and private agencies providing rehabilitation services to individuals with a disability. Until such time as the student enters graduate school, he/she may work in a variety of roles such as caseworker, evaluator, parole officer, probation officer, juvenile

intake officer, children and family service worker, or a number of rehabilitation service-provider roles in direct service agencies or institutions. Examples of these agencies and institutions are state rehabilitation services, departments of social services, mental retardation centers, mental hospitals, correctional facilities, nursing homes, halfway houses, sheltered workshops, employment security divisions, disability determination, and occupational skills training schools.

The student majoring in rehabilitation science must, in addition to completing the general education requirements:

a. Complete the rehabilitation and related required core, including 12 hours of field placement or a 12-hour internship in rehabilitation science.[3] If the field placements are taken instead of an internship, the student must take one placement course in the core rehabilitation area, one in the chosen primary emphasis area, and one in the chosen secondary emphasis area.[1]

b. Complete a minimum of 12 non-field placement hours in a primary emphasis area and 6 hours of the indicated courses in a secondary emphasis area. Emphasis areas available are vocational rehabilitation, social services, aging, corrections, and child welfare.

Curriculum in Rehabilitation Science

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[2]		6
Physical Science [2]		4
General Psychology (PSY 2003)		3
Introduction to Sociology (SOC 1003)		3
Introduction to Rehabilitation Services (RS 2003)		3
Physical Education[2]		2
Algebra for General Education (MATH 1103)[2]		3
Electives		8
	Total	**32**
Sophomore Year		
Principles of Zoology (BIOL 1124) or Basic Human Anatomy (BIOL 2014)[5]		4
Developmental Psychology I (PSY 3063)		3
Statistics for the Behavioral Sciences (PSY 2053)		3
Research & Data Methods for Rehabilitation Science (RS 2093) (Spring)		3
Medical & Psychosocial Aspects of Disability (RS 3004) (Spring)		4
The World of Work (RS 3013)		3
Anthropology (ANTH 1213 or 2003)		3
Elective		2-6
Special Emphasis Area (Primary or Secondary)		3
	Total	**32**
Junior Year		
Principles & Techniques of Rehabilitation Services (RS 3023)		3
Abnormal Psychology (PSY 3003)		3
Fine Arts[2]		3
Humanities[2]		3
Organization and Structure in the Rehabilitation-Human Services Setting (RS 3073) (Fall)		3
Field Placement and/or Special Emphasis Area (Primary or Secondary)[3]		9-10
Electives[4]		5-6
	Total	**30**

Curriculum in Rehabilitation Science

Senior Year	
Social Sciences (HIST 2003, 2013, or POLS 2003)	3
Field Placements or Internship[3]	8-12
Special Emphasis Area (Primary or Secondary)	6-10
Electives[4]	9
Total	**30**

[1]Students are encouraged to become involved in community volunteer service programs to broaden their knowledge of community services and to assist in placement choices prior to enrolling for a field placement. A catalog, listing possible placement sites available to students, will be in the director's office to assist students in placement choices. Prior to making placement choices, the student will have a conference with the placement director to discuss possible placement sites.
[2]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[3]Internships and field placements require professional/student liability insurance.
[4] At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.
[5] If a student has already completed BIOL 1014, they may substitute BIOL 2004 for BIOL 1124 or BIOL 2014 as a Rehabilitation Science requirement.

Sociology

The sociology curriculum is designed to prepare students for employment in a range of careers or for advanced study in sociology, law, criminology, criminal justice, counseling, education, research, population, social work or other related fields. Sociology prepares majors to deal with the constant social change that is today's world. In addition to understanding the organization of social groups and the human behaviors that comprise everyday social life, sociologists remain important contributors to the collection of data pertaining to these levels of human behavior. The undergraduate sociology major learns to identify problems, formulate appropriate questions, search for answers, analyze data, organize information, and express themselves in written and spoken communication. The undergraduate major provides a strong liberal arts degree for entry-level positions throughout the business, social service, and government worlds. The emphasis areas within sociology will provide students with knowledge and skills unique to criminology and populations, health and life course issues, and the effects of these on national and global populations.

In addition to the general education requirements, a student majoring in sociology must complete ANTH 2003, PSY 2003, RS 2003, COMS 1003 and COMS 2003 or BUAD 2003, and a 45 hour curriculum as follows:

1. Complete the sociology core including Introduction to Sociology (SOC 1003). Statistics (SOC 2053), Introduction to Social Research (SOC 3163 and Survey of Sociological Theory (SOC 2083).

2. Students will complete 27 hours in their chosen emphasis area or 27 hours of 3000/4000 level sociology courses for a generalist sociology emphasis. Emphasis area or generalist study will be decided upon in consultation with student's advisor.

3. All majors will complete a two-semester capstone experience (SOC 4163 and SOC 4173) during their senior year which will include an intensive research experience that integrates theoretical and emphasis area perspectives. Both qualitative and quantitative elements of social research will be included in the capstone experience. Upon completion of this capstone, students will have completed a major independent research project to be used as part of a job search or graduate school portfolio.

Criminology Emphasis:

Introduction to Criminal Justice (SOC/CJ 2003)
Crime and Delinquency (SOC/CJ 3043)
Social Organizations (SOC 3003)

Juvenile Justice System (SOC/CJ 3103)
Abnormal Psychology (PSY 3003)
Prison and Corrections (SOC/CJ 3153)
American Constitutional Law 1941 - present (CJ/POLS 4063)
Substance Abuse (RS 4163)
Stratification (SOC 4063) or Minority Relations (SOC 4003)
The Law in Action (SOC/CJ 3206)

Population, Health, and Life Course Emphasis:

Self and Society (SOC 2013)
Communities (SOC 3063)
The Family (SOC 3023) or Minority Relations (SOC 4003)
Population Problems (SOC 3053)
Sociology of Education (SOC 3093) or Stratification (SOC 4063)
Social Gerontology (SOC 3173)
Sociology of Health and Illness (SOC 4053)
Psychosocial Aspects of Death and Dying (PSY/SOC 3013)
Social Movements and Social Change (SOC 3113)

Generalist Emphasis:

Students will take SOC 2013 and choose eight 3000/4000 level courses in consultation with their sociology faculty advisor. Emphasis will be on preparation for advanced degree in Sociology or related area.

Curriculum in Sociology

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
Science[1]		4
Algebra for General Education (MATH 1103)[1]		3
Physical Education[1]		1
Introductory Sociology (SOC 1003)		3
Introduction to Computer Based Systems (COMS 1003)		3
Sociology Emphasis Area (SOC/CJ 2003 or SOC 2013)		3
Fine Arts/Humanities[1]		3
	Total	**32**
Sophomore Year		
Social Sciences[1]		6
Science[1]		4
General Psychology (PSY 2003)		3
Statistics for the Behavioral Sciences (SOC 2053)		3
Survey of Social Theory (SOC 2083)		3
Microcomputer Applications (COMS 2003 or BUAD 2003)		3
Sociology Emphasis Area course(s)		6
Fine Arts/Humanities[1]		3
Physical Education[1]		1
	Total	**32**
Junior Year		
Introduction to Social Research (SOC 3163)		3
Sociology Emphasis Area courses (3000/4000)		15
Cultural Anthropology (ANTH 2003)		3
Introduction to Rehabilitation Services (RS 2003)		3
Electives or related courses[2, 3]		8
	Total	**32**

Curriculum in Sociology

Senior Year	
Sociology Emphasis Area courses (3000/4000)	3
Sociology Capstone I, II (SOC 4163, 4173)	6
Electives or related courses[2, 3]	19
Total	**28**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]To be chosen in consultation with advisor. Students are strongly encouraged to pursue a foreign language.
[3]Sufficient courses at 3000/4000 level to constitute 40 hours.

Anthropology

The anthropology curriculum concentrates on the areas of cultural anthropology. Within this subdivision, the emphasis concerns historic and contemporary cultures (ethnography) and prehistoric cultures (archeology).

The Russellville Station of the Arkansas Archeological Survey is located on the Arkansas Tech University campus and offers traditional opportunities in the state for students interested in archeology.

The following courses are offered as electives or to students who wish to minor in anthropology:

ANTH 1213 Introduction to Anthropology
ANTH 2003 Cultural Anthropology
ANTH 3203 Indians of North America
ANTH 3223 North American Archeology
ANTH 3233 MesoAmerican Archeology
ANTH 3241-4 Seminar in Anthropology
ANTH 4206 Workshop in Anthropology
ANTH 4403 Interpretation/Education through Museum Methods
ANTH 4991-4 Special Problems in Anthropology

Criminal Justice

Dr. James Gadberry, Coordinator

The criminal justice curriculum is designed to (1) prepare students for a career in the field of criminal justice, e.g., police work, probation/parole, federal law enforcement, and (2) provide a minor for students whose major department requires one.

The following courses are offered as electives to students who wish to minor in criminal justice:

CJ 2003 Introduction to Criminal Justice
CJ 2013 Introduction to Security
CJ 3023 Judicial Process
CJ 3033 The Criminal Mind
CJ 3043 Crime and Delinquency
CJ 3063 Probation and Parole
CJ 3073 Police Administration
CJ 3103 The Juvenile Justice System
CJ 3153 Prison and Corrections
CJ 3206 Law in Action
CJ 4023 Law and the Legal System
CJ 4053 Criminal Law and the Constitution
CJ 4063 American Constitutional Law 1941-Present: Civil Liberties and Civil Rights
CJ 4991-4 Special Problems in Criminal Justice

Department of English

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Professors: Brucker, Lake, Lombardo, Schrock
Associate Professors: Darkwah, Harrison, Philpotts, Poznar, Ritchie, Wilson
Assistant Professor: Worley
Instructors: N. Cox, S. Tyson

The Department of English offers majors and teacher licensure in creative writing and English.

The department's programs seek to help students express themselves effectively, especially in writing; develop a respect for and an understanding of language; appreciate and profit from a study of our common literary heritage; increase their awareness of and empathy for diverse peoples and cultures; discover the relevance of ideas and values found in their reading; and learn to think critically and evaluate wisely.

Departmental majors are prepared for a variety of careers in advertising, communications, education, government, management, personnel work, public relations, and sales. A degree in creative writing or English also provides an excellent undergraduate preparation for the student planning to pursue graduate study of business, law, or the humanities.

The degree program in English requires 36 semester hours in English: ENGL 2513, 3013; 3023; 3043; 3313; 3323; 3413; 3423; 4013; and three English electives. The English major must also complete four semesters of study in one foreign language.

The degree program in creative writing requires 42 hours in English: ENGL 2043; 2513; a minimum of 3 hours in 2881 and/or 4881-4; 3043; 3083; 3093; 3313; 3323; 3413; 3423; 4093; and three English electives. The creative writing major must also complete four semesters of study in one foreign language.

Students who plan to use an English or creative writing degree as a preparation for law school are encouraged to complete some of the following electives in addition to their required courses: BUAD 2033, Legal Environment in Business; PHIL 3103, Logic; CJ 4023, Law and the Legal System; POLS 4043, American Constitutional Law to 1941; POLS 4063, American Constitutional Law 1941-Present; CJ 4053, Criminal Law and the Constitution; SOC/CJ 3043, Crime and Delinquency; SPH 2003, Public Speaking; SPH 2111-2121, Debate Practicum; SPH 4153, Persuasive Theory and Audience Analysis.

The curricula for teacher licensure in creative writing and English are printed in the catalog section for the School of Education.

Curriculum in English (BA Degree)

Freshman Year		Hours
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
Science[1]		4
Algebra for General Education (MATH 1103)[1]		3
Foreign Language[2]		6-8
Physical Education[1]		2
Elective[4]		3
	Total	**30-32**
Sophomore Year		
Social Sciences[1]		6
Fine Arts[1]		3
Science[1]		4
Foreign Language[2]		6-8
Methods of Research (ENGL 2513)		3
English Electives[3]		6
Humanities[1]		3
	Total	**31-33**
Junior Year		
Modern American Literature (ENGL 3323)		3
Advanced Composition (ENGL 3043)		3
American Literature to 1900 (ENGL 3313)		3
British Literature to 1800 (ENGL 3413)		3
British Literature since 1800 (ENGL 3423)		3
Introduction to Linguistics (ENGL 3023)		3
Systems of Grammar (ENGL 3013)		3
Electives[4]		9
	Total	**30**
Senior Year		
History of the English Language (ENGL 4013)		3
English Elective (3000-4000 level)		3
Electives[4]		23-27
	Total	**29-33**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]All minimum college hours (at least four semesters) should be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.
[3]Any 2-4000 level English courses excluding English 2003, 2013, 2173, and 2881.
[4]Electives must include sufficient upper-level courses to result in a total of 40 hours at the 3000- 4000 level.

Curriculum in Creative Writing (BFA Degree)

Freshman Year		Hours
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
Science[1]		4
Algebra for General Education (MATH 1103)[1]		3
Foreign Language[2]		6-8
Physical Education[1]		2
Electives		3
	Total	**30-32**
Sophomore Year		
Social Sciences[1]		6
Fine Arts[1]		3
Science[1]		4
Foreign Language[2]		6-8
Methods of Research (ENGL 2513)		3
Creative Writing: Form and Theory (ENGL 2043)		3
Practicum: Literary Journal Publication (ENGL 2881)[3]		1
Humanities[1]		3
	Total	**29-31**
Junior Year		
Modern American Literature (ENGL 3323)		3
American Literature to 1900 (ENGL 3313)		3
English Elective[4]		6
British Literature to 1800 (ENGL 3413)		3
British Literature since 1800 (ENGL 3423)		3
Creative Writing Workshop: Fiction (ENGL 3083)		3
Creative Writing Workshop: Poetry (ENGL 3093)		3
Advanced Composition (ENGL 3043)		3
Practicum: Literary Journal Publication (ENGL 2881)[3]		1
Electives		3
	Total	**31**
Senior Year		
English Elective (3000-4000 level)		3
Electives		23-27
Practicum: Editing Literary Journal (ENGL 4881-4)[3]		1
Seminar: Creative Writing (ENGL 4093)		3
	Total	**30-34**

1See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]All minimum college hours (at least four semesters) should be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.
[3]Students must complete a minimum of three semester hours and may complete a maximum of nine semester hours selected from ENGL 2881 and/or ENGL 4881-4. No more than five semester hours may be ENGL 2881 and no more than six semester hours may be ENGL 4881-4.
[4]Any 2-4000 level English courses excluding English 2003, 2013, 2173, and 2881.

DEPARTMENT OF FOREIGN LANGUAGES AND INTERNATIONAL STUDIES

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Associate Professor: Ward
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The mission of the Department of Foreign Languages and International Studies is to help students attain a state of intellectual freedom that enables them to grow personally, socially, and professionally. The department works to develop students' learning skills in foreign languages, to teach students to communicate effectively, to foster cultural understanding, tolerance and world perspective, and to prepare students to live in a global society.

The Department of Foreign Languages and International Studies offers programs of study leading to a baccalaureate degree in French, German, Spanish, and International Studies. The programs are designed to prepare students to communicate effectively in another language, as well as live, study, or work in international settings. Study or work abroad opportunities, either as part of or after the four-year program, will be available to students. The programs are supported by the most up-to-date technology, available to students in the Foreign Language Lab located in Dean Hall. Departmental majors will be prepared to pursue graduate degrees and a variety of careers in business and industry, communication, education, foreign service, government, and public relations.

Tech is one of only two universities in Arkansas offering a comprehensive foreign language program. Students may choose a degree program in French, German, or Spanish, and also pursue studies in Chinese, Greek, Italian, Japanese, Latin, and Russian.

The **Degree Program in Foreign Languages** requires 34 hours in a foreign language. The student's credit by examination and course work must total 34 semester hours.

Foreign Language majors may pursue teacher licensure in French, German, and Spanish. The curricula for teacher licensure in French, German, and Spanish are printed in the catalog section of the School of Education.

Students with previous foreign language experience may petition the Department of Foreign Languages and International Studies for advanced placement and credit. Petitioners will be given written and/or oral examinations by a foreign language faculty member who will then recommend an appropriate foreign language placement level. This placement level will not exceed FR 3013, GER 3013, GRK 2023, JPN 2024, LAT 2013, or SPAN 3013, and will be approved by the department head. Students who have omitted one or more courses in the basic language sequence will receive credit for omitted courses when they have validated their advanced placement by passing the course into which they are placed with a grade of "C" or better.

Students have the opportunity to attend universities abroad for a semester or an academic year (see the catalog entry under Student Exchange Opportunities).

Student advising is an important part of the programs. Departmental majors will work closely with their faculty advisors to assure successful academic progress.

Curriculum in Foreign Languages
(BA Degree with Concentration in French, German, or Spanish)

Freshman Year		Hours
English Composition I, II (ENGL 1013, 1023)[1]		6
Science[1]		4
World Civilization I, II (HIST 1503, 1513)[1]		6
Mathematics (MATH 1103 or 1113)[1]		3
Physical Education[1]		2
Beginning Language I, II(FR, GER, SPAN 1014, 1024)		8
Fine Arts[1]		3
	Total	**32**
Sophomore Year		
Cultural Anthropology (ANTH 2003)		3
Science[1]		4
Intermediate Language I, II (FR, GER, SPAN 2014, 2024)[2]		8
Electives[3]		15
	Total	**30**
Junior Year		
Introduction to World or American Literature (ENGL 2003 or 2013)		3
U.S. History (HIST 2003 **or** 2013)		3
Conversation and Composition I, II (FR, GER, SPAN 3003, 3013)		6
Introduction to Linguistics (FR, GER, SPAN 3023)		3
Culture and Civilization (FR, GER 3113, SPAN 3123 or 3133)		3
Electives[3]		12
	Total	**30**
Senior Year		
Foreign Language Literature (FR, GER, SPAN 4213, 4223)		6
Electives[3]		26
	Total	**32**

[1] See all appropriate alternatives or substitutions in General Education Requirements (pgs. 78-80).
[2]Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.
[3] At least 40 of the total hours required for graduation must be 3000-4000 level

International Studies

The International Studies program is interdisciplinary. The **Degree Program in International Studies** requires, in addition to the general education core and electives, 27 hours in an area of concentration of the student's choosing, 30 hours of courses selected from an International Studies Core and 9 hours in a foreign language above the 2000 level. Students may select the 27 hours in an area of concentration from any of the departmental majors offered at Tech. All courses need to be in the area of concentration. Students must follow the established course sequence and prerequisite requirements already defined in the catalog.

International Studies majors will have two faculty advisors. The Head of the Department of Foreign Languages and International Studies will supervise the general education, foreign language and international studies requirements and an advisor in the student's area of concentration will supervise the discipline requirements.

International Studies majors who choose a foreign language as an area of concentration, must complete the foreign language requirement of 9 hours above the 2000 level in a second foreign language. Students with previous foreign language experience may petition the Department of Foreign Languages and International Studies for advanced placement and credit. Petitioners will be given written and/or oral examinations by a foreign language faculty member who will then recommend an appropriate foreign language placement level. This placement level will not exceed FR 3013, GER 3013, GRK 2023, JPN 2024, LAT 2013, or SPAN 3013, and will be

approved by the department head. Students who have omitted one or more courses in the basic language sequence will receive credit for omitted courses when they have validated their advanced placement by passing the course into which they are placed with a grade of "C" or better.

One of the unique features of the International Studies program is the paid internship opportunities for its graduates. Qualified students, graduating with an overall grade point average of B or better, will receive assistance in obtaining paid internships or job placements with international companies and organizations.

International Studies Degree Requirements	Hours
General Education Requirements	37
English Composition I, II (ENGL 1013, 1023)[1]	6
Fine Arts[1]	3
Humanities (ENGL 2003 or ENGL 2013)	3
Mathematics (MATH 1113)	3
Physical Education[1]	2
Science[1]	8
Social Sciences (HIST 1503, 1513, POLS 2003 and AMST 2003)	12
Area of Concentration	27
International Studies Requirements	30
Microcomputer Applications (COMS 2003)	3
Speech (SPH 2003 or SPH 2173)	3
Cultural Anthropology (ANTH 2003)	3
Ethics (PHIL 3023)	3
Comparative Government, International Relations, Current Issues in Global Politics, or Modern European Political Theory (POLS 3403, 3413, 4403, or HIST 3463)	6
History of Latin America, Europe in the Twentieth Century, History of Russia, The Modern Far East, or History of Modern Africa (HIST 3353, 4443, 4463,4603, or 4703)	3
Regional Geography of the World, Geography of Latin America, or Geography of Asia (GEOG 2013, 3303, or 3703)	3
Religions of the World, Modern Philosophy, or Contemporary Philosophy (PHIL 2013, 3013, or 3113)	3
Principles of Economics, General Psychology, or Introductory Sociology (Econ 2003, PSY 2003, or SOC 1003)	3
Foreign Language Requirements (must be in one foreign language above the 2000 level)	9
Electives[2]	21
Total	**124**

[1] See General Education requirements (pgs. 78-80).
[2] At least 40 of the total hours required for graduation must be 3000-4000 level courses.

Department of Music

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Professor: Barrow
Associate Professors:
Anders, Cooper, K.L. Futterer,
K.T. Futterer, N. Herrick,
Kiehl, P.D. Parker
Assistant Professors:
K. Johnson, T. Smith, Wheeler
Instructors: H. Gale, Kimball

The Department of Music has an established reputation for the superior quality of the music teacher preparation program and for high standards in musical performance. The various musical organizations have been identified as distinctive or exemplary programs and have been featured on state, regional, and national convention programs.

The objectives of the music department are:

1. To provide the necessary and desirable professional preparation for the training of accredited music teachers for the public schools.
2. To provide undergraduate competencies required of those students desiring to pursue performance or academic careers in graduate programs.
3. To provide opportunities for the cultural growth and development of all college students.
4. To provide opportunities for meaningful professional growth through direct involvement in musical performance in large and small vocal and/or instrumental ensembles.
5. To provide musical, cultural, and educational leadership for the institution, community, and state.
6. To provide a variety of extra-curricular and public-relations functions for the university community.

To meet the requirements for the baccalaureate degree in music, the student must complete 124 semester hours. The music major must include 16 hours in applied music; 8 hours in required ensembles (band, choir, or orchestra); 16 hours in music theory and ear training; and 13 hours in music history, counterpoint, and form analysis.

To meet the requirements for the baccalaureate degree in music education, students must complete 134-138 hours as given in the curriculum in music education. Keyboard and instrumental majors must have one semester of class voice or choir.

All instrumental and vocal majors must demonstrate acceptable piano proficiency or enroll in piano class (MUS 1441) or applied piano (MUS 1201) each semester until passing the Piano Proficiency Exit Exam. Four hours of accompanying seminar (MUS 2201-33201) are required of piano majors.

A senior recital is required of all students. Music majors are required to perform in student recitals each semester. All music majors are required to attend a prescribed number of campus concerts and recitals. Successful completion of six semesters of recital attendance is required.

Private instruction in the student's major performance area is required of all music majors. Such study involves one one-hour lesson or equivalent per week and carries two semester hours credit. Students may elect to study in additional areas of applied music for either one or two hours credit. A fee of $20 per semester hour credit is assessed for all applied music study. The fee for class piano and for class voice is $10 per semester.

Lessons and practice requirements for the applied music courses are as follows: Two-hour credit courses, one one-hour lesson and 12 hours of practice a week; one-hour credit courses, one 30-minute lesson and six hours practice a week. The two-hour courses are primarily for music majors.

Curriculum in Music

Freshman Year	Hours
English Composition I, II (ENGL 1013, 1023)[2]	6
Social Sciences[2]	3
Recital Attendance (MUS 1000)[1]	0
Ear Training I and II (MUS 1731, 1741)	2
Theory I and II (MUS 1713, 1723)	6
Class Piano (MUS 1441, I and II)[1], Piano (MUS 1201)[1] or Accompanying Seminar (MUS 2201)[1]	0-2
Applied Music (MUS 1__2)[1, 4]	4
Band, Orchestra, University Choir, or Concert Chorale (MUS 1501, 1561, 1571, or 1681)[1]	2
Algebra for General Education or College Algebra (MATH 1103 or 1113)[2]	3
Physical Education[2]	2
Total	**28-30**
Sophomore Year	
Science[2]	8
Foreign Language	6-8
Recital Attendance (MUS 1000)[1]	0
Ear Training III and IV (MUS 2731, 2741)	2
Theory III and IV (MUS 2713, 2723)	6
Class Piano (MUS 1441, III and IV)[1], Piano (MUS 1201)[1] or Accompanying Seminar (MUS 2201)[1]	0-2
Applied Music (MUS 1__2)[1, 5]	4
Band, Orchestra, University Choir, or Concert Chorale (MUS 1501, 1561, 1571, or 1681)[1]	2
Total	**28-32**
Junior Year	
Social Sciences[2]	9
Fine Arts[2]	3
Recital Attendance (MUS 3000)[1]	0
Applied Music (MUS 3__2)[1]	4
History of Music I and II (MUS 3773, 3783)	6
Counterpoint (MUS 3712)	2
Band, Orchestra, University Choir, Concert Chorale, or Accompanying Seminar (Mus 3501, 3561, 3571, 3681, or 4201)[1]	2
Electives or Minor Field Courses[3]	6
Total	**32**
Senior Year	
Humanities[2]	3
History of Music III (MUS 3793)	3
Senior Recital (MUS 4001)	1
Applied Music (MUS 3__2)[1]	4
Electives or Minor Field Courses[3]	15-21
Form Analysis (MUS 4712)	2
Band, Orchestra, University Choir, Concert Chorale, or Accompanying Seminar (Mus 3501, 3561, 3571, 3681, or 4201)[1]	2
Total	**30-36**

[1]This course will be taken each semester.
[2]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[3] Elective hours are to be selected from non-music courses. The student may choose a variety or concentration of course selection according to individual interests and career objectives.
[4]Voice majors must take MUS 1231, Applied Voice, and MUS 1241, 1251, Italian Diction, each semester.
[5]Voice majors must take MUS 1231, Applied Voice, and MUS 2241 or 2251, German Diction or French Diction, each semester.

Curriculum in Music Education for Teacher Licensure [4, 5]
(Instrumental Music Option)

Freshman Year		Hours
Recital Attendance (MUS 1000)1		0
Applied Music (MUS 1__2)1		4
Class Piano I, II (MUS 1441)3 or Piano (MUS 1201)1		0-2
Stringed Instruments (MUS 1481)		1
Band (1501)1		2
Music Theory I, II (MUS 1713, 1723)		6
Ear Training I, II (MUS 1731, 1741)		2
Class Voice (MUS 2441) or Choir (MUS 1571)		1
English Composition I, II (ENGL1013, 1023)2		6
Algebra for General Education (MATH 1103)2		3
Physical Education2		2
Personal Health and Wellness (HLED 1513)		3
	Total	**30-32**
Sophomore Year		
Recital Attendance (MUS 1000)1		0
Applied Music (MUS 1__2)1		4
Class Piano III, IV (MUS 1441)3 or Piano (MUS 1201)1		0-2
Band (1501)1		2
Woodwind Instruments (MUS 2421, 2431)		2
Music Theory III, IV (MUS 2713, 2723)		6
Ear Training III, IV (MUS 2731, 2741)		2
Science2		8
Public Speaking (SPH 2003) or Communication and the Classroom Teacher (SPH 3083)		3
Introduction to Secondary Education (SEED 2002)		2
Physical Education2		1
	Total	**30-32**
Junior Year		
Recital Attendance (MUS 3000)1		0
Brass Instruments (MUS 3401)		1
Applied Music (MUS 3__2)1		4
Secondary Instrumental Methods and Materials I (MUS 3281)		1
Band (3501)1		2
History of Music I, II (MUS 3773, 3783)		6
Principles of Conducting (MUS 3802)		2
Percussion Instruments (MUS 4461)		1
People and Cultures of the World (ANTH 2003)		3
American Government (POLS 2003)		3
Fine Arts2		3
Social Science2		3
Educational Technology (SEED 3702)		2
	Total	**31**
Senior Year		
Counterpoint (MUS 3712)		2
Orchestration (MUS 3762)		2
History of Music III (MUS 3793)		3
Music in the Elementary Classroom (MUS 3853)		3
Senior Recital (MUS 4001)		1
Secondary Instrumental Methods and Materials II (MUS 4281)		1
Form Analysis (MUS 4712)		2
Humanities2		3

Curriculum in Music Education for Teacher Licensure [4, 5] (Instrumental Music Option)

Social Science2	3
Adolescent Development and Exceptionalities (SEED 3554)	4
Educational Psychology (SEED 4556)	6
Total	**30**
Senior 9th Semester	
Special Methods in Music (MUS 4701)	1
Seminar in Secondary Education (SEED 4503)	3
Teaching in the Elementary and Secondary School (PK-12) (SEED 4809)	9
Total	**13**

1This course will be taken every semester.
2See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
3Students demonstrating acceptable proficiencies may be exempted from the piano requirement.
4For licensure, students must pass the Praxis II speciality area exams.
5Keyboard majors wishing to certify will be advised by the music department head to determine appropriate courses.

Curriculum in Music Education for Teacher Licensure[4] (Vocal Music Option)

Freshman Year	**Hours**
Recital Attendance (MUS 1000)1	0
Applied Music (MUS 1231)1	2
Italian Diction (MUS 1241, 1251)	2
Class Piano I, II (MUS 1441)3 or Piano (MUS 1201)1	0-2
Stringed Instruments (MUS 1481)	1
University Choir (MUS 1571)1 or Concert Chorale (MUS 1681)1	2
Music Theory I, II (MUS 1713, 1723)	6
Ear Training I, II (MUS 1731, 1741)	2
English Composition I, II (ENGL1013, 1023)2	6
Algebra for General Education (MATH 1103)2	3
Physical Education2	2
Personal Health and Wellness (HLED 1513)	3
Total	**29-31**
Sophomore Year	
Recital Attendance (MUS 1000)1	0
Applied Music (MUS 1231)1	2
Class Piano III, IV (MUS 1441)3 or Piano (MUS 1201)1	0-2
University Choir (MUS 1571)1 or Concert Chorale (MUS 1681)1	2
German Diction (MUS 2241)	1
French Diction (MUS 2251)	1
Woodwind Instruments (MUS 2421)	1
Music Theory III, IV (MUS 2713, 2723)	6
Ear Training III, IV (MUS 2731, 2741)	2
Brass Instruments (MUS 3401)	1
Science2	8
Public Speaking (SPH 2003) or Communication and the Classroom Teacher (SPH 3083)	3
Introduction to Secondary Education (SEED 2002)	2
Physical Education2	1
Total	**32**
Junior Year	
Recital Attendance (MUS 3000)1	0
Applied Music (MUS 3232)1	4
University Choir (MUS 3571)1 or Concert Chorale (MUS 3681)1	2
History of Music I, II (MUS 3773, 3783)	6

Curriculum in Music Education for Teacher Licensure[4]
(Vocal Music Option)

Principles of Conducting (MUS 3802)		2
Secondary Choral Methods and Materials I (MUS 3821)		1
Percussion Instruments (MUS 4461)		1
Vocal Solo Literature and Pedagogy (MUS 4832)		2
Educational Technology (SEED 3702)		2
American Government (POLS 2003)		3
Peoples and Cultures of the World (ANTH 2003)		3
Fine Arts2		3
Social Science2		3
	Total	**32**
Senior Year		
Counterpoint (MUS 3712)		2
Orchestration (MUS 3762)		2
History of Music III (MUS 3793)		3
Music in the Elementary Classroom II (MUS 3853)		3
Senior Recital (MUS 4001)		1
Form Analysis (MUS 4712)		2
Secondary Choral Methods and Materials II (MUS 4821)		1
Adolescent Development and Exceptionalities (SEED 3554)		4
Educational Psychology (SEED 4556)		6
Social Science2		3
Humanities2		3
	Total	**30**
Senior 9th Semester		
Special Methods in Music (MUS 4701)		1
Seminar in Secondary Education (SEED 4503)		3
Teaching in the Elementary and Secondary School (PK-12) (SEED 4809)		9
	Total	**13**

1This course will be taken every semester.
2See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
3Students demonstrating acceptable proficiencies may be exempted from the piano requirement.
4For licensure, students must pass the Praxis II speciality area exams.

Department of Social Sciences and Philosophy

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History and Political Science

The baccalaureate degree in history and political science is excellent preparation for careers in government and education, for further study in graduate school or law school, and for careers in the private sector of the economy. For personal and career flexibility, students can design their degree requirements by selecting courses in American history, European history, or political science. Students may also elect to work toward a social studies secondary teaching licensure.

The history and political science degree requires thirty semester hours in history and political science courses in addition to the required General Education courses. In the General Education requirements, majors are required to take the two-course sequence in World Civilization (HIST 1503, 1513), and the two-course sequence in American history survey (HIST 2003, 2013). The thirty semester hours required for the history and political science degree include POLS 2003 (American Government), three additional hours of political science, and HIST 4963 (Research in History) or POLS 4963 (Research in Political Science). Twenty-one of the required thirty semester hours must be on the 3000-4000 level.

Students must complete 124 hours for graduation with a degree in history and political science.

The curriculum for teacher licensure in social sciences is on page 115.

Curriculum in History and Political Science

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)1		6
World Civilization I, II (HIST 1503, 1513)		6
Science (BIOL 1014, PHSC 1013, 1021)1		8
Algebra for General Education (MATH 1103 or 1113)1		3
Physical Education1		2
Electives		6
	Total	**31**
Sophomore Year		
U.S. History to 1865 (HIST 2003)		3
U.S. History since 1865 (HIST 2013)		3
American Government (POLS 2003)		3
History/Political Science		3
Electives		18
	Total	**30**
Junior Year		
Humanities (PHIL 2003)1		3
Fine Arts1		3
History/Political Science		3
History or Political Science (3000-4000 level)		9
Electives (must be 3000-4000 level)2		12
	Total	**30**
Senior Year		
Research in History (HIST 4963) or Research in Political Science (POLS 4963)		3
History and/or Political Science (3000-4000 level)		9
Electives (12 hours must be 3000-4000 level)2		21
	Total	**33**

1See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
2At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.

Accredited law schools have not, in general, adopted specific requirements for pre-law courses. However, in most cases, courses of value to those planning the study of law include: history, economics, political science, philosophy, psychology, sociology, English composition, and literature, as well as courses in the natural sciences, mathematics, and accounting. A broad cultural background is of prime importance. Rather than attempt to prescribe the specific contents of courses to be taken by pre-law students, Arkansas Tech University considers the individual intellectual interests of students of prime importance, encouraging development of the ability to read and comprehend accurately, rapidly, and thoroughly; to think logically; to analyze and weigh situations and materials; to speak and write clearly; and to develop a critical approach and mature study habits.

In addition to (or included within) the other general education and major requirements for a bachelor's degree, the department highly recommends that courses from the following list be included in programs of students interested in attending law school.

POLS 2003 American Government	POLS 4043 American Constitutional Law to 1941
POLS 3023 Judicial Process	SOC 3043 Crime and Delinquency
CJ 4053 Criminal Law and the Constitution	CJ 4023 Law and the Legal System
BUAD 2033 Legal Environment in Business	BUAD 2073 Principles of Real Estate
ECON 2003 Principles of Economics I	ECON 2013 Principles of Economics II
ENGL 3043 Advanced Composition	PHIL 3103 Logic
SPH 2003 Public Speaking	SPH 2013 Voice and Diction
SPH 2111-2121 Debate Practicum	SPH 4153 Persuasive Theory and Audience Analysis
ACCT 2003 Accounting Principles I	ACCT 2013 Accounting Principles II
JOUR 4123 Laws of Communication	PSY 2003 General Psychology

POLS 4063 American Constitutional Law 1941 - present: Civil Liberties and Civil Rights

Department of Speech, Theatre and Journalism

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Instructor: Donnell

The Speech, Theatre, and Journalism Department offers majors in speech (speech communication and theatre options) and in journalism. Students are involved in both the theoretical and applied dimensions of human communication in these programs. Consequently, students interested in further study and those interested in immediate career opportunities are served. With faculty guidance on the proper selection of courses, students can prepare for: (1) graduate school, (2) public school teaching, (3) recreational or professional theatre, (4) print or broadcast journalism, (5) public relations, or (6) business or government employment requiring communication expertise.

Being able to speak effectively has been recognized as an indicator of the well-educated person throughout recorded history. The ancient Greeks studied the theory and practice of communication under the label of "rhetoric," which also has had a central role in American education since Harvard was founded in 1636. Even in today's technologically sophisticated world, good human communication skills are vitally important for one's personal and professional life. The study of communication in its original form, speech, or its evolved stages of print and electronic communication can prepare the student for citizenship in a democratic society, for more satisfying relationships, and for occupational success.

Journalism

The journalism major requires 24 semester hours in journalism. Twelve hours of the 24-hour major must be upper division level. A maximum of four hours of practicum courses may be counted toward the 24-hour major. Moreover, journalism requires three semesters (9 to 12 hours) of one foreign language.[6] All majors must know how to type on a computer keyboard.

Curriculum in Journalism

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)1		6
World Civilization I, II (HIST 1503, 1513)1		6
Science1		4
Algebra for General Education (MATH 1103)1		3
Introduction to Mass Communication (JOUR 2133)		3
Physical Education1		2
Electives in related areas2,3,4		6
	Total	**30**
Sophomore Year		
Social Sciences1		6
Science1		4
Foreign Language6		6-8
News Writing (JOUR 2143)		3
News Reporting (JOUR 3143)		3
Journalism Electives		3
Electives in related area2,3,4		2-4
Fine Arts1		3
	Total	**31**
Junior Year		
Humanities1		3
Journalism (3000-4000 level)		6
Electives in related areas (3000-4000 level)2,3,4,5		17-18
Foreign Language6		3-4
	Total	**30**

Curriculum in Journalism

Senior Year	
Journalism (3000-4000 level)	6
Electives (3000-4000 level)	8
Electives in related areas2,3,4,5	19
Total	**33**

1See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
2For students interested in a public relations orientation, the following electives are recommended: POLS 3053; PSY 2023; SPH 3073, 4063, 4173; an approved marketing course.
3For students interested in radio and television journalism, the following electives are recommended: SPH 2013, 3063, 3073.
4All journalism majors should take the following electives: SOC 1003; PSY 2003; ECON 2003; POLS 2003, 3033; SPH 2003, 3003.
5At least 40 of the total hours required for graduation must be 3000 - 4000 level courses.
6Three semesters must be in one language. Students with previous study in a foreign language should refer to Foreign Language Advanced Placement and Credit under Credit by Examination.

Speech

The speech major offers a speech communication option and a theatre option. Both options require 30 semester hours selected from departmental course offerings. Eighteen hours of the 30-hour major must be upper division level. Students planning to teach in the public schools should refer to the suggested curriculum in Speech set forth in this catalog under teacher licensure curricula, School of Education.

Those students choosing the speech communication option must take SPH 1003, SPH 1011, SPH 1021, SPH 2003, SPH 3003, SPH 3073, SPH 3123, and SPH 4003. Students choosing the speech communication option, in consultation with an adviser, can design a program in one of the following areas of emphasis: (1) communication for the professions; (2) language and culture; (3) organizational communication; and (4) performance studies.

Curriculum in Speech (Speech Communication Option)

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)1	6
World Civilization I, II (HIST 1503, 1513)1	6
Science1	4
Algebra for General Education (MATH 1103)1	3
Orientation to Speech Communication Studies (SPH 1011)	1
Listening (SPH 1021)	1
Introduction to Speech Communication (SPH 1003)	3
Elective	4
Physical Education1	2
Total	**30**
Sophomore Year	
Social Sciences1	6
Science1	4
Public Speaking (SPH 2003)	3
Argumentation (SPH 3123)	3
Fine Arts1	3
Electives	12
Total	**31**
Junior Year	
Humanities1	3
Interpersonal Communication (SPH 3003)	3
Group Discussion (SPH 3073)	3
Speech Electives (3000-4000 level)	3
Electives (9 hours must be 3000-4000 level)	18
Total	**30**

Curriculum in Speech (Speech Communication Option)

Senior Year	
Human Communication Theory (SPH 4003)	3
Speech or Theatre Electives (3 hours must be 3000-4000 level)	7
Electives (13 hours must be 3000-4000 level)	23
Total	**33**

1See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
2Electives must include sufficient upper-level courses to result in a total of 40 hours at the 3000- 4000 level.

Theatre

Those students choosing the theatre option must take SPH 1003, SPH 2003, SPH 2013; 6 hours of Theatre History, TH 4263, TH 4273, TH 4313 and TH 4323; and the appropriate Senior Projects course, TH 4243, TH 4543, TH 4843. Students choosing the theatre option, in consultation with an adviser, can design a program in one of the following areas of emphasis (1) acting/directing; (2) design/technical; and (3) theatre history and criticism.

Curriculum in Speech (Theatre Option)

Freshman Year	Hours
English Composition I, II (ENGL 1013, 1023)1	6
World Civilization I, II (HIST 1503, 1513)1	6
Science1	4
Algebra for General Education (MATH 1103)1	3
Introduction to Speech Communication (SPH 1003)	3
Theatre elective	3
Elective	3
Physical Education1	2
Total	**30**
Sophomore Year	
Social Sciences1	6
Science1	4
Voice and Diction (SPH 2013)	3
Public Speaking (SPH 2003)	3
Fine Arts1	3
Electives	12
Total	**31**
Junior Year	
Humanities1	3
Theatre History (Choose 2: TH 4263, TH 4273, TH 4313, TH 4323)	6
Theatre/Speech Electives (3000-4000 level)2	6
Electives (9 hours must be 3000-4000 level)	12
Electives	5
Total	**32**
Senior Year	
Theatre/Speech Electives (3000-4000 level)	3
Electives (3000-4000 level)	10
Electives3	15
Senior Project (TH 4243, TH 4543, or TH 4843)	3
Total	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]A maximum of seven hours of theatre practice or theatre practicum courses may be counted toward the thirty-hour major.
[3]Electives must include sufficient upper-level courses to result in a total of 40 hours at the 3000- 4000 level.

SCHOOL OF PHYSICAL AND LIFE SCIENCES

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The School of Physical and Life Sciences is subdivided into three administrative units-the Departments of Biological Science, Physical Science, and Nursing. These departments offer a variety of major programs leading to baccalaureate and associate degrees. The school also serves a special role in providing the principal curricular needs of students seeking to enter professional schools of medicine, dentistry, medical technology, optometry, pharmacy, chiropractic, and others. A secondary service is that of contributing to the general education of those students majoring outside of the School of Physical and Life Sciences.

Students earning degrees in the School of Physical and Life Sciences are in a particularly enviable position. Their undergraduate education makes them eligible to compete for immediate employment in a variety of professional positions or for entry into graduate school.

The School of Physical and Life Sciences offers programs of study leading to baccalaureate and associate degrees as listed below:

Bachelor of Science

- Biology, also with an Environmental option
- Chemistry with A.C.S. Approved, Environmental, and General options
- Engineering Physics
- Fisheries and Wildlife Biology
- Geology with Professional and Environmental options
- Health Information Management
- Medical Technology
- Physical Science with General, Physics, and Nuclear Physics options

Bachelor of Science in Nursing

- Nursing

Associate of Science

- Medical Assistant

Environmental Science

Three environmental science degree options are available as follows: B.S. in biology-environmental option, B.S. in chemistry-environmental option, and B.S. in geology-environmental option. The student interested in environmental science should choose the program that best suits his or her interest based on background, competencies, and career objectives.

Arkansas Tech University's location in the Arkansas River Valley between the Ouachita and Ozark mountains is ideally suited to environmental programs. With the diversity of ecosystems and geological formations found, the area serves as an outdoor laboratory encompassing habitats that range from wetland and riparian ecosystems to upland coniferous and mountaintop deciduous forests. Swamps, streams, rivers, and lakes dot the landscape. Geological formations ranging in age from Ordovician to Pennsylvanian are within easy field trip distance from the University. Crop farming, hog and poultry production, a nuclear-powered electricity generating plant, coal strip mining, urban centers, and a multi-use national forest provide ample opportunities for studying the impact of modern society on ecosystems and the natural environment.

The employment opportunities in environmental science are good and projected to continue to increase. Graduates may find employment with environmental consulting companies, local, state, or federal governmental agencies, and private companies that have significant environmental impact. Environmental scientists are involved in the following types of studies: environmental impact analysis, pollution assessment and control, solid waste landfill location and management, ecosystem analysis, surface and groundwater resources, and air quality, and many others.

The student interested in a specific environmental science curriculum should refer to the appropriate section of this book. For example, the B.S. in biology-environmental science option is listed with the other biology curricula.

DEPARTMENT OF BIOLOGICAL SCIENCES

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Nupp, Sparacino, Yamashita
Instructors: Chaney, Merle

The Department of Biological Sciences offers bachelor of science degree curricula in biology, an environmental option in biology, fisheries and wildlife biology, health information management, and medical technology. In addition, an associate degree program in medical assistant and a certificate program in medical transcription are offered. Students interested in teaching biology at the secondary level should follow the suggested curriculum in Life Science and Earth Science for Teacher Licensure as outlined under the teacher licensure curricula, School of Education.

Each of the bachelor of science degree programs offered by the department, with the exception of medical technology and teacher licensure curricula, requires a total of 124 hours for graduation. The medical technology program requires a minimum of 130 hours for completion. Except for Allied Health Science programs (AHS), which are governed by certifying associations, no more than 12 hours of "D's" may be applied toward the degree. Students in the Department of Biological Sciences, except for AHS program majors, are required to take a common core consisting of: BIOL 1114, Principles of Biology; BIOL 1124, Principles of Zoology; BIOL 1134, Botany; BIOL 3034, Genetics; BIOL/FW 3114, Ecology; BIOL 3124, General Physiology, or BIOL 3074, Human Physiology; and a seminar course. These same students are required to take MATH 1113, College Algebra, plus two additional math courses above that level. Students should see specific degree programs for math requirements. A computer science (COMS) course is also required.

Graduating seniors, except those in AHS programs, will be required to take the Major Field Assessment Test (MFAT) in Biology as part of the assessment plan for the department. Students will take the test during the semester of planned graduation. The test will be administered during assessment week.

Biology

The baccalaureate degree program in biology is designed to prepare students for a wide range of career opportunities. It also provides a solid foundation for those wanting to pursue specialization at the graduate level. Pre-professional courses have been arranged to meet the requirements of students wishing to study medicine, dentistry, pharmacy, and related fields of specialization.

Majors in biology must complete 40 semester hours in biology. Specific course requirements are outlined in the curriculum in biology below; whereas, more general guidelines are in the previous section.

Arkansas Tech University is affiliated with the Gulf Coast Research Laboratory (GCRL) at Ocean Springs, Mississippi. With prior departmental approval, Arkansas Tech University students may enroll in marine biology courses at GCRL, with the credits applied toward the biology degree at Arkansas Tech. This affiliation makes possible a concentration in marine biology.

Curriculum in Biology

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
College Algebra (MATH 1113)		3
Social Sciences[1]		6
Principles of Biology (BIOL 1114)		4
Principles of Zoology (BIOL 1124)		4
Principles of Botany (BIOL 1134)		4
Physical Education[1]		2
	Total	**29**
Sophomore Year		
Social Sciences[1]		6
General Chemistry I, II (CHEM 2124, 2134)		8

Curriculum in Biology

Genetics (BIOL 3034)		4
Mathematics[2]		6
Biology Elective [3]		4
Computer Science Elective[5]		3
	Total	**31**
Junior Year		
Physical Principles I, II (PHYS 2014, 2024)		8
Organic Chemistry (CHEM 3254, 3264)		8
Biology Elective (3000-4000 level)		4
General Physiology (BIOL 3124) or Human Physiology (BIOL 3074)		4
Principles of Ecology (BIOL 3114)		4
Electives		4
	Total	**32**
Senior Year		
Seminar (BIOL 4891)		1
Fine Arts/Humanities[1]		6
Biology Electives[4]		7
Electives[4]		18
	Total	**32**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Six hours of mathematics above MATH 1113. Statistics and Calculus are recommended.
[3]Students interested in concentrating in molecular biology should take courses in biochemistry, microbiology, and immunology or cell biology. Students interested in concentrating in field biology should take courses in dendrology, entomology, herpetology, ichthyology, invertebrate zoology, limnology, mammalogy, ornithology, plant taxonomy, and parasitology.
[4]Sufficient courses at 3000-4000 level to constitute 40 hours.
[5]COMS 2003 recommended.

Biology-Environmental Option

The baccalaureate degree program in biological science includes an environmental option. This program offers a curriculum with the necessary courses in biology, chemistry, and economics to provide an educational foundation for students interested in pursuing employment or graduate studies in the environmental sciences.

Curriculum in Biology (Environmental Option)

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
College Algebra (MATH 1113)		3
Introductory Sociology (SOC 1003)[1]		3
Principles of Environmental Science (BIOL 1004)		4
Principles of Biology (BIOL 1114)		4
General Chemistry I, II (CHEM 2124, 2134)		8
Physical Education[1]		2
	Total	**30**
Sophomore Year		
Environmental Chemistry (CHEM 2143)		3
Principles of Economics (ECON 2003)[1]		3
American Government (POLS 2003)[1]		3
Principles of Zoology (BIOL 1124)		4
Principles of Botany (BIOL 1134)		4
Computer Science (COMS 2003)		3
Statistics (PSY 2053 or MATH 2163)		3
Physical Principles I,II (PHYS 2014, 2024)		8
Environmental Seminar (BIOL/CHEM/GEOL 2111)		1
	Total	**32**

Curriculum in Biology (Environmental Option)

Junior Year		
Organic Chemistry (CHEM 3254, 3264)		8
Calculus[2]		3-4
Social Sciences[1]		3
Fine Arts/Humanities[1]		3
General Physiology (BIOL 3124)		4
Principles of Ecology (BIOL 3114)		4
Technical Communication (ENGL 2053)		3
Environmental Seminar (BIOL/CHEM/GEOL 3111)		1
	Total	**29-30**
Senior Year		
Genetics (BIOL 3034)		4
Conservation (BIOL 3043)		3
Microbiology (BIOL 3054)		4
Limnology (BIOL 4024)		4
Fine Arts/ Humanties[1]		3
Fundamentals of Toxicology (CHEM 3353)		3
Environmental Seminar (BIOL/CHEM/GEOL 4111)		1
Biology Elective (3000-4000 level)		4
Electives[3]		6-7
	Total	**32-33**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]MATH 2914 is recommended if you are considering graduate school in this field. Furthermore, MATH 2924 should be considered for a general elective. Otherwise, MATH 2243 is recommended..
[3]Recommended electives include: AGSS 2014, FW 3024, FW 4034,GEOL 1014 and 3153, POLS 2013 and 4103, or SPH 2003 (but also note footnote 2, relative to calculus).

Fisheries and Wildlife Biology

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The fisheries and wildlife biology program is a professional program designed to prepare qualified field and research biologists, as well as to provide a sound foundation for those students who intend to pursue graduate studies in wildlife biology, fisheries biology or field ecology. Through selection of appropriate elective courses, graduates are eligible for certification by the Wildlife Society or the American Fisheries Society.

Field biologists are employed by various state and federal agencies concerned with natural resources management including the Arkansas Game and Fish Commission, U.S. Fish and Wildlife Service, U.S. Forest Service, Arkansas Department of Pollution Control and Ecology, National Park Service, and the U.S. Army Corps of Engineers.

Employment opportunities in the private sector are also available. Timber, mining, and utility companies hire field biologists for advice and management of industrial lands. Environmental consulting firms, commercial fish and game farms, and nature centers require qualified researchers, technicians, and educators. Arkansas is known for its abundant natural resources and outdoor recreation. The need for professionally trained field biologists and natural resource managers is expected to expand.

Majors in fisheries and wildlife biology must complete a minimum of 124 semester hours as specified in the following curriculum outline. No more than 12 hours of "D's" may be applied toward the degree. Candidates for graduation are expected to complete a comprehensive series of practical and technical exams to assess mastery of program objectives.

Curriculum in Fisheries and Wildlife Biology

Freshman Year		Hours
Orientation to Fisheries and Wildlife Science (FW 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
Principles of Biology (BIOL 1114)		4
Principles of Zoology (BIOL 1124)		4
Social Sciences[1]		6
General Chemistry I (CHEM 2124)		4
College Algebra (MATH 1113)		3
Physical Education[1]		2
	Total	**30**
Sophomore Year		
Principles of Botany (BIOL 1134)		4
Applied Physics (PHYS 1114 or alternate)		4
Technical Communication (ENGL 2053)		3
Computer Science Elective[5]		3
Fundamentals of Organic Chemistry (CHEM 3254)		4
Ichthyology (FW 3084) or Mammalogy (FW 3154) or Ornithology (FW 3144)		4
Principles of Ecology (FW 3114)		4
Social Sciences[1]		3
Statistics (PSY 2053 or MATH 2163)		3
	Total	**32**
Junior Year		
Junior Seminar in Fisheries and Wildlife Biology (FW 3001)		1
Social Sciences[1]		3
Fine Arts/Humanities[1]		3
Calculus for Business and Economics (MATH 2243 or alternate)		3
Principles of Wildlife Management (FW 4003)		3
Limnology (FW 4024) or Forest Ecology (FW 3024)		4
General Physiology (BIOL 3124)		4
Plant Taxonomy (BIOL 3004) or Dendrology (BIOL 4044)		4
Public Speaking (SPH 2003)		3
Electives[2,3,4]		3
	Total	**31**
Senior Year		
Fine Arts/Humanities[1]		3
Genetics (BIOL 3034)		4
Fish and Wildlife Administration (FW 4053)		3
Principles of Fisheries Management (FW 4083)		3
Senior Seminar in Fisheries and Wildlife Biology (FW 4001)		1
Wildlife Techniques (FW 4013) or Fisheries Techniques (FW 4043)		3
FW Electives (3000-4000 level)[3,4]		8
Electives[2,3,4]		6
	Total	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]The Wildlife Society requires a total of 6 hours of administration and planning courses. See advisor.
[3]Qualification as a federal wildlife biologist requires a total of 9 hours of botany.
[4] Fisheries Society requires a total of four courses in fisheries and aquatic science, 15 hours of physical science, and 6 hours of human dimensions. See advisor.
[5]COMS 2003 recommended.

Allied Health Science Programs

The allied health science programs include a two-year curriculum in medical assistant and four-year curricula in health information management and medical technology. Additionally there is a certificate program in medical transcription. Statements and curricula for these programs are listed below.

Health Information Management

Melinda Wilkins, Director
Wilson Hall, Room 105
(501) 968-0690

The degree program in health information management prepares the student for a professional career as an active member of the modern health-care team. In this age of increased computerization and data analysis, the health information management field is an exciting new area with virtually unlimited possibilities. The health information management administrator is an expert in the world of health record systems. He/she is responsible for obtaining complete health records for use in research; for gathering statistical information on which to base long-range health planning goals; for determining the legitimacy of requests for confidential medical information; for controlling the circulation and integrity of health records; and, as department head, is responsible for efficiency of the health information department employees in the performance of daily activities.

The health information department in a medical facility has in its care all the documentation regarding patient-care, physician as well as ancillary information. Responsibility for data validity and integrity play a major role in the health information profession. He/she must be progressive, conscientious, tactful, and knowledgeable, as much work is accomplished in cooperation with other allied health professionals. Above all, the health information professional must adhere to the Code of Ethics of the American Health Information Management Association and to the appropriate institutional behavioral codes that apply.

Directed practice is scheduled at affiliated hospitals in nearby cities for a period of six hours per week during the fall and spring semesters. The management affiliation may be assigned to a hospital in a distant city for four weeks (40 hours per week) and normally occurs in the summer immediately following the senior year. Students are responsible for all transportation and lodging expenses during these assignments; however, every effort will be made to minimize such costs.

Students must make at least a "C" in each of the professional courses and demonstrate their proficiency in directed practice and management-affiliation. Upon successful completion of the program, the student is granted a Bachelor of Science degree in health information management and becomes eligible to write the national certification examination. The student already holding a baccalaureate degree may apply for the HIM program as specified in the Application Guidelines and work toward another baccalaureate degree provided the pre-professional course of study has been completed to establish eligibility to write the national certification examination. Accredited record technicians are urged to contact the Program Director for information regarding RHIA progression. The national certification examination is given once each year by the American Health Information Management Association.

The application process for the Health Information Management Program is as follows:

Arkansas Tech University Health Information Management Program Application Guidelines

1. Application for upper level professional HIM courses must be on file with the HIM Program Director by March 15th prior to the year you wish to take HIM courses.
2. To be eligible for application interview, the following must be on file:
   a. Application
   b. Current copy of all applicable transcripts, including current GPA of 2.5 on a 4.0 scale
   c. COMPASS/ACT scores

3. Applicants will be required to complete an interview with an interview team. Consideration will be given to areas such as:
   Dedication and perseverance
   Aptitude
   Knowledge of HIM profession
   Professional appearance
   Flexibility
   Realistic career goals
   True desire to enter HIM profession
   Ability to finish HIM program within prescribed time

4. Candidates will be ranked based on interview score, GPA, and number of prerequisite courses completed. The top twenty will be selected. A ranked order waiting list will be maintained by the HIM Program Director.

5. Candidates will be notified prior to pre-registration for the fall semester. If accepted, candidates must return a signed statement acknowledging acceptance. Candidates must register for courses indicated on the degree plan. Any change in degree plan requires approval of the student's HIM faculty advisor. Candidates must notify the program director of change in degree choice.

6. A late application deadline of August 15th will be observed if positions are available. Late applicants will be notified as soon as possible or during the week of late registration.

7. If a candidate fails a course that would preclude graduation, or does not earn at least a "C" in HIM courses, reapplication to the HIM Program will be required.

The Health Information Management Program is accredited by the Commission on the Accreditation of Allied Health Educational Programs (CAAHEP) in cooperation with the American Health Information Management Association's Council on Accreditation.

Curriculum in Health Information Management

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Algebra for General Education (MATH 1103)[1]	3
Electives (HIM 1002, Health Information Management Orientation, suggested)	2
Introduction to Computer Based Systems (COMS 1003)	3
Public Speaking (SPH 2003)	3
Introduction to Biological Science (BIOL 1014)	4
Social Sciences[1]	6
Basic Pharmocology with an Overview of Microbiology (AHS 1024)	4
Total	**31**
Sophomore Year	
Social Sciences[1]	6
Physical Education[1]	2
Basic Human Anatomy and Physiology (BIOL 2004)	4
Medical Terminology (AHS 2013)	3
Survey of Chemistry (CHEM 1114)[1]	4
Microcomputer Applications (COMS 2003)	3
Accounting Principles I (ACCT 2003)	3
Electives	2
Total	**27**

Curriculum in Health Information Management

Junior Year		
Statistics for the Behavioral Sciences (PSY 2053)		3
Fine Arts/Humanities[1]		6
Introduction to Health Information Management (HIM 3024)		4
Personnel/Human Resource Management (MGMT 4023)		3
Principles of Disease (HIM 4153)		3
Management and Organizational Behavior (MGMT 3003)		3
Alternative Health Records (HIM 3133)		3
Health Data and Statistics (HIM 3132)		2
Electives (HIM 3142, Healthcare Registries, suggested)		2
	Total	**29**
Senior Year		
Directed Practice I, II (HIM 4182, 4292)		4
Organization and Administration in HIM (HIM 4063)		3
Basic Coding Principles (HIM 3033)		3
Advanced Concepts in HIM (HIM 3043)		3
Research in Health Information Management (HIM 4092)		2
Advanced Coding Principles (HIM 4033)		3
Computer Applications in Accounting and Business (COMS 3803)		3
Legal Concepts of the Health Field (HIM 4073)		3
Health Organization Trends (HIM 4083)		3
Systems Analysis for HIM (HIM 4983)		3
	Total	**30**
Summer Session (Following Senior Year)		
Affiliation (HIM 4895)		5
Seminar in Health Information Management (HIM 4892)		2
	Total	**7**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

Medical Assistant

Medical assistants serve with medical doctors in their offices or other medical settings, performing administrative and/or clinical duties. The medical assistant curriculum is a two-year associate of science degree program. This program offers the student a broad foundation in basic medical assisting skills, including a period of practical experience in a medical facility working under the supervision of clinic personnel and the Medical Assistant Program Director.

Basic medical assistant training and education consist of learning experiences in science, communication skills, medical records and medical transcription; medical laboratory and examination room procedures; and general office practices.

Admission to the second year of the program is on a competitive basis and is limited to twenty students each year. Students must make at least a “C” in each of the professional courses. A student is eligible for admission to the second year of study upon: completion of all prerequisites with an overall grade point average of at least a 2.00 on a 4.00 scale; demonstration of typing proficiency or completion of a keyboarding class with a grade of "C" or better; presentation of evidence of good health; and satisfactory completion of a personal interview with the program director. If more than twenty students qualify for the second year of the program, they will be ranked by cumulative grade point average. Those not admitted in the first round of selection will be placed on a ranked waiting list. As vacancies develop, they will be filled from the waiting list.

Students enrolled in AHS 2034, AHS 2044, and AHS 2055 are required to carry malpractice liability insurance. A group insurance policy is arranged by the program director, but the premiums are paid by the student and are not included in the tuition and fees paid to the University.

The Medical Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Committee on Accreditation for Medical Assistant Education. Students who successfully complete the associate degree program for medical assistant will be eligible to sit for the Certified Medical Assistant (CMA) examination.

Curriculum in Medical Assistant

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Principles of Zoology (BIOL 1124) or Principles of Biology (BIOL 1114)	4
Basic Pharmacology with an Overview of Microbiology (AHS 1024)	4
Mathematics[1]	3
General Psychology (PSY 2003)	3
Speech (SPH 1003 or 2003)	3
Principles of Word Processing (BUAD 2043)	3
Introduction to Computer Based Systems (COMS 1003)	3
First Aid (PE 2513)	3
Total	**32**
Sophomore Year	
Basic Human Anatomy and Physiology (BIOL 2004)	4
Medical Terminology (AHS 2013)[3]	3
Medical Laboratory Orientation and Instrumentation (AHS 2023)	3
Medical Laboratory Orientation and Instrumentation, Laboratory (AHS 2022)	2
Medical Assistant Clinical Practice (AHS 2034)	4
Medical Assistant Clinical Practice, Laboratory (AHS 2031)	1
Professional Medical Transcription (HIM 2003)	3
Medical Assistant Administrative Practice (AHS 2044)	4
Legal Concepts for the Health Fields (HIM 4073)	3
Computers in the Medical Office with an Overview of Insurance Procedures (AHS 2053)	3
American History[2]	3
Total	**33**
Summer Session (Following Sophomore Year)	
Externship (AHS 2055)	5
Medical Assistant Seminar (AHS 2061)	1
Total	**6**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]HIST 2003, 2013.
[3]Credit may be earned through successful completion of the challenge examination in medical terminology. Refer to the section in this catalog entitled "Credit by Examination."

Medical Technology

Arkansas Tech University, in affiliation with approved schools of medical technology, offers a four-year program leading to the bachelor of science degree and to certification as a medical technologist. The affiliated schools of medical technology are accredited by the Council on Medical Education and Hospitals of the American Medical Association.

The first three years of the curriculum are taught on the Tech campus and the fourth (professional) year is taught at one of the affiliated schools of medical technology. Admission to the professional year is on a competitive basis and students must meet the admission standards of the medical technology school.

Personnel with Medical Technology Affiliated Institutions

Baptist Medical System, Little Rock, Arkansas: John E. Slaven, M.D., Medical Director, School of Medical Technology; Sandra G. Ackerman, B.S., M.T (ASCP)S.H., Program Director, School of Medical Technology.

St. John's Regional Medical Center, Joplin, Missouri: Michael Thompson, M.D., Medical Director: B.S., University of Nebraska, 1980; M.D., Creighton School of

Medicine, 1997; Medical Director of School of Medical Technology, 1998. Debbie Lorimer, M.A., M.T. (ASCP), Program Director: B.S., Pittsburg State University, 1974; Medical Technology Internship, Jane Phillips Episcopal Memorial Hospital, 1974; Masters in Laboratory Management, Central Michigan University, 1982; Program Director of School of Medical Technology, 1994.

To qualify for the bachelor of science degree the student must satisfactorily complete a minimum of 90 semester hours during the first three years of the program and 40 semester hours during the final professional year (52 weeks of class) at an affiliated medical technology school. The third year of the curriculum (30 semester hours) must include 20 semester hours in courses numbered 3000 or above, of which 4 semester hours must be in chemistry and 7 or 8 semester hours in biology. Also, the third year of the curriculum must be completed in residence at Arkansas Tech University.

Tuition and fees for courses taken the senior year at one of the affiliated medical technology schools will be assessed at the current rate charged by the affiliated school and are payable to Arkansas Tech University. Financial aid and scholarship arrangements are also made by Tech.

Upon successful completion of the final 40 hours at an affiliated medical technology school, a student is eligible for a bachelor of science degree, as well as being eligible to write the National Board Examination for licensure. This examination is given at various times throughout the year by the Board of Registry of the American Society of Clinical Pathologists.

Curriculum in Medical Technology

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
College Algebra (MATH 1113)		3
Plane Trigonometry (MATH 1203)		3
Principles of Zoology (BIOL 1124) or Principles of Biology (BIOL 1114)		4
General Chemistry I, II (CHEM 2124, 2134)		8
Physical Education[1]		2
Electives		3
	Total	**29**
Sophomore Year		
Social Sciences[1]		9
Physical Principles I, II (PHYS 2014, 2024)		8
Medical Terminology (AHS 2013)[2]		3
Fine Arts/Humanities[1]		3
Medical Laboratory Orientation and Instrumentation (BIOL 2023)		3
Medical Laboratory Orientation and Instrumentation, Laboratory (BIOL 2022)		2
Electives		3-4
	Total	**31-32**
Junior Year		
Microbiology (BIOL 3054)		4
General Psychology (PSY 2003)		3
Fine Arts/Humanities[1]		3
Biology (BIOL 2004, 3034, 3064, 3074, 3134, 4023, or 4033)		7-8
Chemistry (CHEM 3245, 3254, 3264, 3343, or 4413)		12-13
	Total	**29-31**
Senior Year		
Clinical Microscopy and Body Fluids (MEDT 4012-3)[3]		2-3
Hematology (MEDT 4029)[3]		9
Immuno-hematology (MEDT 4035)[3]		5

Curriculum in Medical Technology

Clinical Chemistry and Instrumentation (MEDT 4048-9)[3]		8-9
Microbiology (MEDT 4056-7)[3]		6-7
Parasitology (MEDT 4064)[3]		4
Serology (MEDT 4073)[3]		3
Special Topics (MEDT 4081-2)[3]		1-2
	Total	**40**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Credit may be earned through successful completion of the challenge examination in medical terminology. Refer to the section in this catalog entitled "Credit by Examination."
[3]All 4000 level MEDT courses are offered at affiliate institutions; enrollment is completed through Arkansas Tech University.

Medical Transcription
Chris Merle, Coordinator
Wilson Hall, Room 105
(501) 968-0364

An educational program in medical transcription will prepare the student for entry-level employment as a medical transcriptionist, by providing the basic knowledge, understanding, and skills required to transcribe medical dictation with accuracy, clarity, and timeliness, while applying principles of professional and ethical conduct.

The certificate program in medical transcription is available to students completing the two-semester curriculum outlined below. Graduates may be eligible to take the voluntary certification examination offered by the American Association for Medical Transcriptionists (AAMT). The AAMT recommends that applicants have a minimum of three years of experience in transcribing acute-care reports prior to taking the examination.

Medical transcription requires knowledge of medical terminology and internal organization of medical reports, as well as operation of modern transcription equipment. Medical transcriptionists may be employed in a variety of health-related settings, including doctors' offices, hospitals, clinics, laboratories, radiology departments, insurance companies, and governmental medical facilities.

Interested students are encouraged to contact the Medical Transcription Coordinator at the first opportunity for advising. To be eligible for a certificate in medical transcription, the student must obtain a "C" or better in all courses and must complete at least 14 hours on the Tech campus. The student must also have a minimum overall grade point average of 2.0 on a 4.0 scale in courses required for the medical transcription certificate.

Curriculum in Medical Transcription

Summer Terms		**Hours**
Keyboarding I and II (BUAD 1001, BUAD 2002)		3
Introduction to Computer Based Systems (COMS 1003)		3
Medical Terminology (AHS 2013)		3
	Total	**9**
Fall Semester		
Fundamentals of Medical Transcription (HIM 2003)		3
Basic Human Anatomy and Physiology (BIOL 2004)		4
Principles of Word Processing (BUAD 2043)		3
Principles of Disease (HIM 4153)		3
	Total	**13**
Spring Semester		
Advanced Medical Transcription (HIM 3003)		3
English Composition (ENGL 1013)		3
	Total	**6**

DEPARTMENT OF NURSING

Rebecca Burris, Head
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Associate Professors:
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Assistant Professors:
L. Buckholtz, K. Cox, S. Daily,
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J. Helms, L. Kennedy
Learning Resources
Coordinator: C. Bosold

Arkansas Tech University's nursing curriculum is designed to prepare students for beginning professional responsibilities in a variety of health-care settings and to provide the necessary foundations for graduate study.

The Bachelor of Science in Nursing program is approved by the Arkansas State Board of Nursing and the Arkansas Department of Higher Education. The program is accredited by the National League for Nursing Accrediting Commission, 61 Broadway, New York, N.Y. 10006, Telephone: 800-669-1656.

The Department of Nursing offers undergraduate study in nursing to qualified high school graduates, graduates of diploma and associate degree programs in nursing, licensed psychiatric technician nurses, and licensed practical nurses. The baccalaureate program leads to the degree of Bachelor of Science in Nursing. Satisfactory completion of two academic years of foundation courses followed by two years of upper-division professional nursing courses is required.

Upon completion of degree requirements, the student may be eligible to take the national examination (NCLEX) for licensure as a registered nurse. All nursing students should be aware that the State Board of Nursing requires all applicants for the NCLEX to have a criminal background check performed. If the applicant has ever been convicted of a crime, the Board will review the application and make a decision as to whether the applicant is eligible to take the NCLEX exam and to practice nursing in the State of Arkansas. Any student who has been convicted of a crime should notify his or her advisor before taking the prerequisite courses. This information will be kept strictly confidential. The student will be advised of the method of petitioning the Board and counseled regarding the process. A registered nurse may be subject to losing his or her license if the conviction is discovered after the license is granted.

The Department of Nursing reserves the right to make changes, without prior notice, in the curriculum and program requirements. Changes are made in keeping with the changing health needs of society and/or the best interests of the students and the department to maintain quality professional nursing education.

The Department of Nursing utilizes the clinical facilities and services of the Arkansas River Valley area; however, in order to completely meet the objectives of certain courses, the student should be prepared to travel out of this area. Students are required to provide their own transportation.

In addition to the on-campus program, courses for the senior year are offered in Fort Smith, Arkansas. Inquiries may be made at (501) 709-1968.

Admission

Admission into lower division foundation courses is open to any Arkansas Tech University student who meets the requirements. Nursing majors are encouraged to seek academic advising from the nursing faculty immediately upon acceptance to the University.

Admission to the upper division nursing courses is competitive and subject to evaluation by the Nursing Department's Admission and Progression Committee. Generic students are considered for admission the spring preceding the fall in which they plan to enter nursing courses. All transcripts and/or credentials along with an Application to Upper Division must be submitted to the Department of Nursing by March 1. Eligible Registered Nurses applying for admission to Level III and repeating students applying for readmission to Level I or III must also submit an application for upper division by March 1. Eligible repeating students applying for readmission to Level II or IV must submit all required materials by October 1. Minimum requirements for acceptance into the upper division nursing courses are:

1. Prerequisite grade point average of 2.75 on a 4.0 scale. Students will be admitted according to the criteria for selection of upper division students.

2. Completion of the following courses with a grade of "C" or better in each: ENGL 1013, ENGL 1023, MATH 1103, BIOL 2014, BIOL 3054, BIOL 3074, CHEM 1114, PSY 2003, PSY 3063, SOC 1003, NUR 2023, NUR 2303, NUR 3103, and NUR 3803.

3. Completion of the following courses: Social Science - 3 hours, American History or Government - 3 hours, Humanities - 3 hours; Fine Arts - 3 hours; Electives - 8 hours, and two semester hours of physical education. (See General Education requirements for specific course alternatives.) Students may be admitted with some deficiencies in this group of general education prerequisites. The total number of hours is not to exceed six (6). These courses must be completed within one calendar year of entering the upper-division nursing courses.

4. Acquisition of professional/student liability insurance and current certification of Basic CPR as taught by the American Heart Association, American Red Cross, or persons currently certified in CPR instruction. These must be renewed each year.

5. Evidence of good health as validated by a physician or nurse practitioner and dentist.

6. Initiation of Hepatitis B Vaccine series.

7. Students who withdraw due to failure or for personal reasons must reapply for admission by March 1 or October 1 (whichever is applicable) of the year they wish to re-enter. The student will be considered according to the Admission Criteria.

8. Students who have not attended Arkansas Tech University during the past year must apply for readmission to the University and the department by March 1 of the year they wish to re-enter.

9. The nursing program must be completed within four years of entry into upper-division nursing. Part time options are available. A copy of the part time curriculum can be obtained from any nursing advisor.

The criteria for selection of upper division students is as follows:
Applicants will be ranked in groups as follows:

1. All requirements are complete at the end of the spring semester. GPA$\geq$3.25.

2. Student has no more than 6 hours of prerequisite requirements outstanding at the end of the spring semester. GPA$\geq$3.25.

3. All requirements are complete at the end of the spring semester. GPA$\geq$2.75-3.25

4. Student has no more than 6 hours of prerequisite requirements outstanding at the end of the spring semester. GPA$\geq$2.75-3.25

5. All but 10 hours of prerequisite requirements are complete at the end of the spring semester. Of the 10 total hours, up to 4 hours of core requirements may remain outstanding at the end of the spring semester. GPA$\geq$2.75

6. All but 14 hours of prerequisite requirements are complete at the end of the spring semester. Of the 14 total hours, up to 8 hours of core requirements may remain outstanding at the end of the spring semester. GPA$\geq$2.75

7. Do not admit at this time.

Applications will be ranked according to the above categories and within each category by prerequisite GPA. Admission will be determined by the resulting rank

order. In the event that all factors are equal, rank will be determined by random drawing. Note: Prerequisite courses include all courses for freshman and sophomore years listed in the curriculum section of the Tech catalog. Applicants completing prerequisites prior to or during summer session I are required to submit transcripts prior to the registration period for fall semester.

Applicants completing prerequisite requirements during summer session II must submit a written note from the course instructor(s) verifying the grade(s) earned in the course(s). These students will sign a form agreeing to have official transcripts on file in the registrar's office within one month from the date of fall registration.

A student position may be filled in a discretionary manner for exemplary reasons as determined by the committee and approved by the faculty.

Progression Policy

Students must achieve a "C" or better in all nursing courses. Repeating of courses during the two years (four levels) of the nursing major is limited to only one level. Exceptions may be made when they are due to circumstances beyond the student's control, such as when an accident or illness causes a student to fail all of the course(s) he/she was taking; however, the student will be encouraged to withdraw instead of remaining in the course(s) and receiving a failing grade. Any exceptions to the proviso will be made through the Head of the Department. Any subsequent failures (achieving less than a "C") in any nursing course will result in permanent dismissal from the program.

Students achieving less than a "C" in theory will automatically fail the accompanying practicum course.

Students who are repeating a practicum course previously failed will be required to audit the accompanying Theories and Concepts course. The student who audits a course must participate fully in all requirements of the course, including taking of tests.

Advanced Placemen

The different types of nursing education programs and vocational-technical school programs give rise to unique transfer problems. Each student's past education is evaluated individually. In addition, the University and the Department of Nursing have established the following policies:

1. Arkansas Tech University offers a baccalaureate degree program in nursing. Licensed registered nurses, licensed practical nurses and licensed psychiatric technical nurses may challenge, validate, or receive credit for general education and nursing courses that are included in the nursing curriculum. CLEP examinations can be used to challenge or validate the general education courses. The institution's general policy for awarding CLEP credit is followed in determining the successful challenge of courses by these examinations. Transfer credit will be given for prior challenge or validation tests of nursing content credited on official transcripts from other nursing programs. RNs are permitted to receive transfer credit for NUR 3304.

2. Licensed practical nurses (LPNs) and licensed psychiatric technical nurses (LPTNs) who have met all the lower division nursing curriculum requirements and graduated from an approved Arkansas PN or PTN program or an out-of-state NLN accredited program may receive credit for 13 hours of nursing courses (NUR 3204, NUR 3404, NUR 3103, NUR 3502) if they meet specific requirements.

   a: Have a current LPN or LPTN license in Arkansas.

   b: Graduated less than 12 months prior to entry into the upper division of nursing.

   c: Graduated 12 to 36 months prior to entry into the upper division of nursing and have 1000 hours of nursing employment during the last 12 months prior to entry into the upper division of nursing.

d: Graduated 37 to 60 months prior to entry into the upper division of nursing and have 2000 hours of nursing employment during the last 24 months prior to entry into the upper division of nursing. NURSING CREDITS WILL BE HELD IN ESCROW PENDING COMPLETION OF THE PROGRAM.

Licensed practical nurses (LPNs) and licensed psychiatric technical nurses (LPTNs) who do not meet the above criteria can challenge or validate 16 hours of nursing courses that are included in the nursing curriculum. LPNs and LPTNs may challenge or validate nursing courses NUR 3204 and NUR 3404 by taking the National League for Nursing ACE I with a decision score of 75 (eight credit hours); NUR 2303 by taking the National League for Nursing Normal Nutrition examination with a decision score of 50 (three credit hours); and NUR 3103 and NUR 3502 by taking a written and demonstration skills test developed by the Department of Nursing faculty with a decision score of 75 (five credit hours). Students must enter upper division within two academic years after passing the challenge examination or the examination will be invalid.

3. Licensed registered nurses who have met all the lower division nursing curriculum requirements and graduated from an associate degree or diploma program that was NLN accredited at the time of graduation may receive credit for 30 hours of nursing courses (NUR 2023, NUR 3103, NUR 3502, NUR 3204, NUR 3606, NUR 3404, NUR 3703, NUR 3805) if they meet specific requirements.

   a: Have a current RN license in Arkansas.

   b: Have graduated less than 12 months prior to entry into the upper division.

   c: Have graduated within 12 to 36 months prior to entry into the upper division of nursing and have 1000 hours of nursing employment during the 12 months immediately prior to entry into the upper division of nursing.

   d: Have graduated 37 to 60 months prior to entry into the upper division of nursing and have 2000 hours of nursing employment during the 24 months immediately prior to entry into the upper division of nursing.

   NURSING CREDITS WILL BE HELD IN ESCROW PENDING COMPLETION OF THE PROGRAM.

   Registered nurses (RNs) who do not meet the above criteria can challenge or validate 33 hours of nursing that are included in the nursing curriculum.

   RNs can challenge or validate nursing courses by taking the National League for Nursing ACE II Examination with a decision score of 100 or 50th percentile for Nursing 2023, 3103, 3502, 3204, 3606, 3404, 3703, 3805 for 30 credit hours; and by the National League for Nursing Normal Nutrition Examination with a decision score of 50 for Nursing 2303 for three credit hours; all of which total 33 credit hours. Students must enter the senior-level nursing courses within two academic years after passing the challenge examination or the examination will be considered invalid.

4. Students who have had health-care education or experience, but are not licensed health-care professionals, will be evaluated individually by the Admission and Progression Committee for advanced placement.

5. Nursing students other than Registered Nurses must comply with the general institutional provisos; i.e., the last 30 semester hours of work toward a degree must be done in residence; no more than 30 semester hours of correspondence, extension, and credit by examination may be applied toward a

degree; and, normally, a maximum of 68 semester hours of acceptable credit may be transferred from community colleges.

6. Transfer students from senior colleges and universities must comply with the provisions in Item 3 above but are not subject to any credit hour limitations from those institutions.

Curriculum in Baccalaureate Nursing

Freshman Year		**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[2]		3	3
Algebra for General Education (MATH 1103)		3	
Survey of Chemistry (CHEM 1114)		4	
General Psychology (PSY 2003)			3
Introductory Sociology (SOC 1003)		3	
Human Anatomy (BIOL 2014)			4
Physical Education[2]		1	1
Elective[3]		1	2
Social Sciences (HIST 2003, 2013 or POLS 2003)[2]			3
	Total	**15**	**16**
Sophomore Year			
Developmental Psychology I (PSY 3063)		3	
Microbiology (BIOL 3054)			4
Human Physiology (BIOL 3074)		4	
Applied Pathophysiology (NUR 3803)			3
Social Sciences[2]		3	
Humanities[2]		3	
Fine Arts[2]			3
Nutrition (NUR 2303)		3	
Electives[3]			5
	Total	**16**	**15**
Summer Session I or II (prior to Junior Year)			
Introduction to Professional Nursing (NUR 2023)		3	
Skills I (NUR 3103)		3	
	Total	**6**	
Junior Year			
Theories and Concepts I, II (NUR 3204, 3606)		4	6
Skills II (NUR 3502)		2	
Health Assessment (NUR 3304)		4	
Nursing Pharmacology (NUR 3703)			3
Practicum in Nursing I, II (NUR 3404, 3805)		4	5
	Total	**14**	**14**
Summer Session (prior to Senior Year)[1]			
RN (Registered Nurse) Seminar (NUR 4201)		1	
	Total	**1**	
Senior Year[4]			
Theories and Concepts III, IV (NUR 4206, 4606)		6	6
Nursing Research (NUR 4303)		3	
Practicum in Nursing III, IV (NUR 4405, 4806)		5	6
Independent Study5 (NUR 4991-4)			1-4
Selected Topics (NUR 4202)			2
	Total	**14**	**15-18**

[1]Required only for the registered nurse student.
[2]See General Education requirements (pgs. 78-80).
[3] students must have 8 hours of electives. (ENGL 2053, PSY 3163 and NUR 1001 recommended)
[4] students, LPTN's and LPN's must choose either NUR 4202 or at least 2 hours of NUR 4991-4.
[5]Registered nurses must choose either NUR 4202 or at least 1 hour of NUR 4991-4.

DEPARTMENT OF PHYSICAL SCIENCES

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The Department of Physical Sciences offers majors in chemistry, engineering physics, geology, and physical science. Students interested in teaching science in secondary schools should follow the curriculum in science set forth in this catalog under the teacher licensure curricula, School of Education.

The statements and curricula for each of the various degrees are listed below.

Chemistry

The primary purpose of the chemistry program is to educate students in an area of science which is rapidly expanding. The chemists of today are involved in the development of a multitude of new materials such as plastics, drugs, and agricultural products. Research chemists are conducting studies of the fundamental nature of matter which lead to expanded knowledge in medicine and biology. Each course in chemistry stresses laws, theories, and applications in the lecture portion and offers students the opportunity to have "hands-on" experience in well equipped laboratories.

Chemistry is one of the highly recommended courses of study for students interested in pursuing careers in a variety of professional endeavors such as the health sciences: medicine, pharmacy, dentistry, and para-medical fields.

Chemistry offers three curricula. The "General Option" is specifically designed with a minimum of required courses so that students, in cooperation with their faculty academic advisors, can exercise a maximum degree of flexibility in tailoring programs to meet their individual aspirations. By judiciously choosing electives, individuals can enrich these minimum requirements to prepare for futures in law, technical marketing, environmental science, computer science, technical writing, toxicology, education, technical illustration, engineering, health sciences, and biochemistry.

Chemistry also offers an option in environmental studies. The objective of this curriculum is to bring together the disciplines of chemistry, biology, and geology as applied to the environment. Emphasis will be on interdisciplinary approaches to environmental studies.

The program is certified by the American Chemical Society and also offers an "A.C.S. Certified Option." This option is especially recommended for students who plan to pursue graduate studies in chemically related fields or those persons wishing to seek employment as industrial chemists.

Chemistry majors must earn a grade of "C" or better in all chemistry courses (including transfer credits) in order to satisfy graduation requirements.

Curriculum in Chemistry (General Option)

Freshman Year		**Hours**
Orientation to Physical Science (PHSC 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		3
General Chemistry I, II (CHEM 2124, 2134)		8
Calculus I, II (MATH 2914, 2924)[2]		8
Introduction to Biological Sciences (BIOL 1014)		4
Electives		2
	Total	**32**
Sophomore Year		
Organic Chemistry (CHEM 3254, 3264)		8
Quantitative Analysis (CHEM 3245)		5
Social Sciences[1]		3
Computer Science (COMS 1303 or 2003)		3
Physics (PHYS 2114, 2124 or PHYS 2014, 2024)		8
Electives		6
	Total	**33**

Curriculum in Chemistry (General Option)

Junior Year		
Physical Chemistry I (CHEM3324)		4
Social Sciences[1]		3
Fine Arts/Humanities[1]		6
Physical/Biological Science elective excluding chemistry[3]		3
Electives[4]		6
Chemistry Seminar (CHEM 3301)		1
Social Sciences[1]		3
Physical Education[1]		2
	Total	**28**
Senior Year		
Chemistry Seminar (CHEM 4401)		1
Instrumental Analysis (CHEM 4414)		4
Chemistry Electives		3
Biochemistry (CHEM 3343)		3
Electives[4]		20
	Total	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Depending on previous preparation, student should recognize that prerequisite mathematics courses may be required before enrolling in MATH 2914.
[3]Science elective must be a BIOL, GEOL, PHYS, or PHSC course excluding PHSC 1013, PHSC 1021, and BIOL 1014.
[4] semesters of German, Statistics, and Technical Communications are especially encouraged. (Electives must include sufficient upper-level courses to result in a total of 40 hours at the 3000-4000 level.)

Curriculum in Chemistry (Environmental Option)

Freshman Year		**Hours**
Orientation to Physical Science (PHSC 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
General Chemistry I, II (CHEM 2124, 2134)		8
Principles of Botany (BIOL 1134)		4
Computer Science (COMS 1303 or 2003)		3
Social Sciences[1]		3
Principles of Environmental Science (PHSC 1004)		4
Environmental Chemistry (CHEM 2143)		3
	Total	**32**
Sophomore Year		
Organic Chemistry (CHEM 3254, 3264)		8
Calculus for Business and Economics (MATH 2243)[2]		3
Physical Principles (PHYS 2014, 2024)		8
Physical Education[1]		1
Quantitative Analysis (CHEM 3245)		5
Humanities[1]		3
Environmental Seminar (CHEM 2111)		1
	Total	**29**
Junior Year		
Social Sciences[1]		3
Principles of Zoology (BIOL 1124)		4
Physical Geology (GEOL 1014)		4
Fine Arts[1]		3
Technical Communications (ENGL 2053)		3
Conservation (BIOL 3043)		3
Environmental Seminar (CHEM 3111)		1
Toxicology (CHEM 3353)		3

Curriculum in Chemistry (Environmental Option)

Statistics[3]		3
Electives		4
	Total	**31**
Senior Year		
Environmental Politics (POLS 4103)		3
Hydrogeology (GEOL 3083)		3
Principles of Economics I (ECON 2003)		3
Principles of Ecology (BIOL 3114)		4
Physical Education[1]		1
Microbiology (BIOL 3054)		4
Social Sciences[1]		3
Instrumental Analysis (CHEM 4414)		4
Special Problems (CHEM 4991-4)		1-4
Electives		5
Environmental Seminar (CHEM 4111)		1
	Total	**32-35**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] on preparation, student should recognize that prerequisite mathematics courses may be required before enrolling in MATH 2243.
[3]PSY 2053 or MATH 2163.

Curriculum in Chemistry (A.C.S. Approved Option)

Freshman Year	**Hours**
Orientation to Physical Science (PHSC 1001)	1
English Composition I, II (ENGL 1013, 1023)[1]	6
Social Sciences[1]	3
General Chemistry I, II (CHEM 2124, 2134)	8
Calculus I, II (MATH 2914, 2924)[2]	8
Introduction to Biological Sciences (BIOL 1014)	4
Electives	3
Total	**33**
Sophomore Year	
Organic Chemistry (CHEM 3254, 3264)	8
Quantitative Analysis (CHEM 3245)	5
Social Sciences[1]	3
Computer Science (COMS 1303 or 2003)	3
Physics (PHYS 2114, 2124 or PHYS 2014, 2024)	8
Calculus III (MATH 2934)	4
Total	**31**
Junior Year	
Social Sciences[1]	3
Fine Arts[1]	3
Humanities[1]	3
Chemistry Electives	3
Physical Chemistry I, II (CHEM 3324, 3334)	8
Electives[3]	3
Chemistry Seminar (CHEM 3301)	1
Social Sciences[1]	3
Physical Education[1]	2
Total	**29**
Senior Year	
Instrumental Analysis (CHEM 4414)	4
Advanced Inorganic Chemistry (CHEM 4424)	4

Curriculum in Chemistry (A.C.S. Approved Option)

Chemistry Seminar (CHEM 4401)	1
Principles of Biochemistry (CHEM 3343)	3
Advanced Topics in Chemistry (CHEM 4433)	3
Electives[3]	14
Special Problems in Chemistry (CHEM 4992-4)	2-4
Total	**31-33**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Depending on previous preparation, student should recognize that prerequisite mathematics courses may be required before enrolling in MATH 2914.
[3]Two semesters of German, Statistics, and Technical Communications are especially encouraged. (Electives must include sufficient upper-level courses to result in a total of 40 hours at the 3000-4000 level.)

Geology

The science of geology seeks to develop an understanding of the Earth's physical and chemical processes, environmental systems, and natural resources. Geologists work in a variety of areas, discovering new sources of fossil fuels, minerals, and economically important rocks. Volcanoes, earthquakes, landforms, surface and subsurface water, earth history, and fossils are all subjects for study. Also, geologists may work as a member of an interdisciplinary team in planning construction projects, sanitary landfills, mine land reclamation, and other environmentally-oriented projects. Employment opportunities for geologists exist in private industry, state and federal government agencies, and teaching at all levels.

Geology students may follow programs designed to prepare them for entry into graduate school, employment in the geotechnical field, or secondary school earth science teaching. The best opportunities exist for students who continue their education and complete the master's or doctor's degree in geology. Major oil and gas companies generally require the master's degree for an entry-level position. Also, excellent employment opportunities are available in the environmental geotechnical field.

The geology major will study for a bachelor of science degree. This degree requires a minimum of 124 semester hours with a minimum of 43 semester hours in geology (professional option), or a minimum of 36 semester hours in geology (environmental option). Students interested in teaching as a profession should follow the Earth Science curriculum listed under teacher licensure curricula, School of Education. Additional departmental courses and related courses may be specified for geology majors following particular emphasis programs; and for some emphasis programs, substitutions of the above list may be required. Strongly recommended are MATH 2914 and 2924, or 2163 and 3153.

The geology program is fully interdisciplinary and the student and his/her advisor can "build" an academic program through selection of appropriate electives to suit the special needs and interests of the student.

Curriculum in Geology (Professional Option)

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Regional Geography (GEOG 2013)[1]	3
General Psychology (PSY 2003)[1]	3
Physical Geology (GEOL 1014)	4
Historical Geology (GEOL 2024)	4
Orientation to Physical Sciences (PHSC 1001)	1
College Algebra (MATH 1113)	3
Plane Trigonometry (MATH 1203)	3
Physical Education[1]	2
Biology[1]	4
Total	**33**

Curriculum in Geology (Professional Option)

Sophomore Year	
Social Sciences (POLS 2003, AMST 2003)	6
General Chemistry I, II (CHEM 2124, 2134)	8
Mineralogy (GEOL 3014)	4
Invertebrate Paleontology (GEOL 3124)	4
Petrology (GEOL 3164)	4
Electives	3
Seminar (GEOL 2001)	1
Engineering Graphics (ENGR 1002)	2
Total	**32**
Junior Year	
Fine Arts[1]	3
Seminar (GEOL 3001)	1
Structural Geology (GEOL 3004)	4
Geologic Field Techniques (GEOL 3023)	3
Geomorphology (GEOL 3044)	4
Physical Principles I, II (PHYS 2014, 2024)	8
Introduction to Computer Based Systems (COMS 1003), FORTRAN Programming (COMS 1103), Calculus I (MATH 2914) or Introduction to Statistical Methods (MATH 2163)	3-4
Electives	3-4
Total	**30**
Summer after Junior Year (or Senior Year)	
Field Geology (GEOL 4006)	6
Total	**6**
Senior Year	
Humanities (ENGL 2003 or PHIL 2003)	3
Principles of Stratigraphy and Sedimentation (GEOL 4023)	3
Seminar (GEOL 4001)	1
Electives (6 hours must be 3000/4000 level)	16
Total	**23**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

Curriculum in Geology (Environmental Option)

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Principles of Economics (ECON 2003)[1]	3
General Psychology (PSY 2003)[1]	3
Physical Geology (GEOL 1014)	4
Orientation to Physical Sciences (PHSC 1001)	1
Historical Geology (GEOL 2024)	4
Principles of Environmental Science (PHSC 1004)	4
College Algebra (MATH 1113)	3
Microcomputer Applications (COMS 2003)	3
Physical Education[1]	2
Total	**33**
Sophomore Year	
Social Sciences (POLS 2003, AMST 2003)	6
Survey of Chemistry (CHEM 1114)	4
Mineralogy (GEOL 3014)	4
Petrology (GEOL 3164)	4
Environmental Chemistry (CHEM 2143)	3
Technical Communication (ENGL 2053)	3

Curriculum in Geology (Environmental Option)

Introduction to Biological Science (BIOL 1014)		4
Statistics (MATH 2163 or PSY 2053)		3
Environmental Seminar (GEOL 2111)		1
	Total	**32**
Junior Year		
Fine Arts[1]		3
Environmental Seminar (GEOL 3111)		1
Structural Geology (GEOL 3004)		4
Geologic Field Techniques (GEOL 3023)		3
Geomorphology (GEOL 3044)		4
Environmental Geology (GEOL 3153)		3
Physical Principles (PHYS 2014, 2024)		8
Elective (3000-4000 level)		3
Engineering Graphics (ENGR 1002)		2
	Total	**31**
Senior Year		
Humanities (ENGL 2003 or PHIL 2003)		3
Geographic Information Systems (FW 4034)		4
Environmental Seminar (GEOL 4111)		1
Fundamentals of Organic Chemistry (CHEM 3254)		4
Hydrogeology (GEOL 3083)		3
Conservation (BIOL 3043)		3
Electives (Geology, Mathematics, Biology, Chemistry)		10
	Total	**28**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).

Physical Science-General Option

The baccalaureate degree in physical science offers a program of study in which the student can elect a major emphasis in the physical sciences department. The curriculum is designed with enough flexibility so that students may prepare for a number of professions. Additionally, a broad scientific background can be provided in this curriculum for students anticipating the teaching of science in the secondary schools. The physical science degree curriculum is ideally suited for students planning a military career as it affords a desirable general scientific background.

To qualify for a baccalaureate degree in physical science (general option), the student must complete the following minimum number of semester hours; eight hours in biology, eight hours in chemistry, eleven hours in physics, four hours in geology (eleven hours in secondary education majors), and eleven hours in mathematics. The student must also complete an additional 29 semester hours in four of the following subject areas: chemistry, engineering, geology, mathematics, physics, and physical science (BIOL 1014 and PHSC 1013, 1021 may not be counted in these hours).

Curriculum in Physical Science (General Option)

Freshman Year		**Hours**
Orientation to Physical Sciences (PHSC 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
General Chemistry I, II (CHEM 2124, 2134)		8
College Algebra (MATH 1113)		3
Introduction to Biological Science (BIOL 1014)[1]		4
Biology Electives		4
Physical Education[1]		2
	Total	**34**

Curriculum in Physical Science (General Option)

Sophomore Year		
Social Sciences[1]		6
Calculus I (MATH 2914)		4
Calculus II (MATH 2924)		4
Physical Geology (GEOL 1014)		4
Physical Principles (PHYS 2014, 2024) or General Physics (PHYS 2114, 2124)		8
Physical Sciences, Mathematics, or Engineering Electives2		6
	Total	**32**
Junior Year		
Fine Arts/Humanities[1]		6
Astronomy (PHSC 3053)		3
Modern Physics (PHYS 3213)		3
Physical Sciences or Mathematics Electives (3000-4000 level)[2]		9
Computer Science (COMS 1103 or 2003)[3]		3
Electives		7
	Total	**31**
Senior Year		
Meteorology (PHSC 3033)		3
Physical Sciences or Mathematics Electives (3000-4000 level)[2]		8
Electives (14 hours 3000-4000 level)		16
	Total	**27**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] MATH 3033, Methods of Teaching Elementary Mathematics.
[3]Select course appropriate to student's knowledge of computers.

Physical Science-Physics Option

It is the physicist's task to relate the abstract domain of mathematics to the real world. The ability to apply the laws of logic to the reasoning process is the student physicist's prime mental asset. Imagination and vision are also important to the physicist. Vast amounts of information are assimilated into a few fundamental laws or theories in such diversified fields as optics, mechanics, thermodynamics, electricity and magnetism, quantum mechanics, and nuclear physics.

The physics curriculum is designed to serve the needs of students in the fields of engineering, medicine, and other sciences. The junior and senior courses are tailored for students who desire a concentration in physics for a bachelor of science degree in physical science and/or wish to pursue graduate study in areas such as physics and/or astronomy.

To qualify for a bachelor of science degree in the physical science (physics option) program area, the student must take eight hours in chemistry, three hours in computer science, 27 hours in mathematics, and a minimum of 30 hours in physics. Twenty-two semester hours in these courses must be at the 3000 or 4000 level. A minimum of 38 hours must be taken in the Department of Physical Science.

Curriculum in Physical Science (Physics Option)

Freshman Year		Hours
Orientation to Physical Sciences (PHSC 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
College Algebra (MATH 1113)		3
Plane Trigonometry (MATH 1203)		3
Calculus I (MATH 2914)		4
Physical Education[1]		2
General Chemistry I, II (CHEM 2124, 2134)		8
	Total	**33**

Curriculum in Physical Science (Physics Option)

Sophomore Year		
Calculus II (MATH 2924)		4
Calculus III (MATH 2934)		4
General Physics (PHYS 2114, 2124)		8
Social Sciences[1]		6
Biology[1]		4
Computer Science (COMS 1103 or COMS 2003)		3
Electives[2]		3
	Total	**32**
Junior Year		
Fine Arts/Humanities[1]		3
Differential Equations (MATH 3243)		3
Physics Electives (3000-4000 level)		6
Mechanics (PHYS 3023)		3
Theory of Electricity and Magnetism (PHYS 3133)		3
Electives[2]		6
Electric Circuits I (ENGR 2103)		3
Electric Circuits II (ENGR 2113)		3
Electric Circuits Laboratory (ENGR 2111)		1
	Total	**31**
Senior Year		
Fine Arts/Humanities[1]		3
Mathematics Elective (3000-4000 level)[3]		6
Advanced Physics Laboratory (PHYS 4113)		3
Modern Physics (PHYS 3213)		3
Quantum Mechanics (PHYS 4013)		3
Special Problems in Physics (PHYS 4991-4)		1
Electives (must be 3000-4000 level)[3]		9
	Total	**28**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2] hours of electives must be in physics, chemistry, geology, biology, engineering, or computer science.
[3]MATH 3033, MATH 3123, and MATH 4113 may not be included in these electives.

Physical Science-Nuclear Physics Option

The nuclear physics curriculum is designed to provide a baccalaureate degree program for persons employed or those interested in employment in the nuclear power industry. The program provides a combination of courses which will form a firm theoretical foundation for those presently employed as nuclear power plant operators. Students without nuclear power industry experience or training will, in addition to the theoretical education provided through the program, receive sufficient training to enter nuclear power plant specific training. Graduates will also be prepared to enter a graduate school in nuclear physics or nuclear engineering.

Specific course requirements for the degree are listed in the curriculum which follows.

Curriculum in Physical Science (Nuclear Physics Option)

Freshman Year	**Hours**
Orientation to Physical Sciences (PHSC 1001)	1
English Composition I, II (ENGL 1013, 1023)[1]	6
Social Sciences[1]	3
Calculus I (MATH 2914)	4
Calculus II (MATH 2924)	4
General Chemistry (CHEM 2124, 2134)	8
Engineering Materials (ENGR 2023)	3

Curriculum in Physical Science (Nuclear Physics Option)

Computer Science (COMS 1103 or COMS 2003)		3
	Total	**32**
Sophomore Year		
Social Sciences[1]		9
Calculus III (MATH 2934)		4
Differential Equations (MATH 3243)		3
General Physics (PHYS 2114, 2124)		8
Biology[1]		4
Physical Education[1]		2
	Total	**30**
Junior Year		
Fine Arts/Humanities[1]		3
Radiation Health Physics (PHYS 3033)		3
Electronics (PHYS 3143)		3
Modern Physics (PHYS 3213)		3
Basic Nuclear Engineering (ENGR 3503)		3
Mechanics of Fluids and Hydraulics (ENGR 4403)		3
Thermodynamics I (ENGR 3313)		3
Engineering Elective		3
Electives		5
	Total	**29**
Senior Year		
Fine Arts/Humanities[1]		3
Business Administration Elective		3
Physics Elective (3000-4000 level)		8
Power Plant Systems (ENGR 4323)		3
Heat Transfer (ENGR 4443)		3
Advanced Physics Laboratory (PHYS 4113)		3
Special Problems in Physics (PHYS 4991)		1
Electives[2]		9
	Total	**33**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]One hour must be at the 3000/4000 level.

Engineering Physics

Students graduating with an engineering physics degree will be well qualified for jobs requiring highly technical skills and theoretical knowledge. Also, the degree program will prepare students for graduate studies in the fields of physics and engineering. However, those interested in employment immediately after graduation will have numerous alternatives for career choices. Job opportunities for an engineering physics graduate could include employment in industries such as: McDonnell Douglas/Boeing, Texas Instruments, Honeywell, Microsoft, Polaroid, Union Carbide, National Institute of Standards & Technology, Entergy, Tennessee Valley Authority, and Dow Chemical. Also, government agencies such as NASA, National Bureau of Standards, Office of Naval Research, Department of Energy, etc., provide additional employment opportunities for engineering physics graduates.

To qualify for a baccalaureate degree in engineering physics, the student must complete eight hours in chemistry, three hours in computer science, 18 hours in mathematics, 33 hours in physics (including the core physics courses), and 26 hours in engineering. Specific course requirements for the degree are listed in the curriculum which follows.

Curriculum in Engineering Physics

Freshman Year		Hours
Orientation to Physical Sciences (PHSC 1001)		1
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		3
Calculus I (MATH 2914)		4
Calculus II (MATH 2924)		4
General Chemistry (CHEM 2124, 2134)		8
Engineering Materials (ENGR 2023)		3
Foundations of Computer Programing I (COMS 2103)		3
Physical Education[1]		1
	Total	**33**
Sophomore Year		
Social Sciences[1]		9
Physical Education[1]		1
Calculus III (MATH 2934)		4
General Physics (PHYS 2114, 2124)		8
Biology[1]		4
Differential Equations (MATH 3243)		3
Mechanics (PHYS 3023)		3
	Total	**32**
Junior Year		
Fine Arts/Humanities[1]		3
Business Administration Elective		3
Electric Circuits I (ENGR 2103)		3
Electric Circuits II (ENGR 2113)		3
Electric Circuits Laboratory (ENGR 2111)		1
Modern Physics (PHYS 3213)		3
Optics (PHYS 3003)		3
Mechanics of Materials (ENGR 3013)[3]		3
Theory of Electricity and Magnetism (PHYS 3133)		3
Thermodynamics and Statistical Mechanics (PHYS 4003)		3
Mathematics Elective (3000-4000 level)[2]		3
	Total	**31**
Senior Year		
Fine Arts/Humanities[1]		3
Quantum Mechanics (PHYS 4013)		3
Advanced Physics Laboratory (PHYS 4113)		3
Mechanics of Fluids and Hydraulics (ENGR 4403)		3
Advanced Topics in Physics and Astronomy (PHYS 4213)		3
Advanced Engineering Electives (3000-4000 level)		6
Heat Transfer (ENGR 4443)		3
Special Problems in Physics (PHYS 4991)		1
Special Problems in Engineering (ENGR 4991)		1
Electives		2
	Total	**28**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]MATH 3033, MATH 3123, and MATH 4113 may not be included in these electives.
[3]For engineering physics majors PHYS 3023 and PHYS 4003 will satisfy the prerequisites for ENGR 3013 and ENGR 4403.

Pre-Professional Programs

Dr. Robert Allen
Dr. Scott Kirkconnell,
Coordinators
McEver Hall,
Rooms 20C & 13A

Arkansas Tech University offers complete pre-professional training programs in medicine, dentistry, and pharmacy. Statements and curricula for these programs are listed below.

Pre-Medical or Pre-Dental

Students who plan to complete a bachelor of science degree before entering professional school may take their major in another area but must include as electives the specific courses required by the school of their choice.

It is recommended that students pursuing this course of study plan to graduate with a major in biology, chemistry, physical science or natural science even though the professional field requires only two or three years of college work for admission. Requirements are subject to change and most professional schools are already admitting only students with baccalaureate degrees.

Curriculum in Pre-Medical or Pre-Dental

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Social Sciences[1]	6
Principles of Biology (BIOL 1114)	4
General Chemistry I, II (CHEM 2124, 2134)	8
College Algebra (MATH 1113)	3
Plane Trigonometry (MATH 1203)	3
Physical Education[1]	2
Total	**32**
Sophomore Year	
Social Sciences[1]	6
Principles of Zoology (BIOL 1124)	4
Organic Chemistry (CHEM 3254, 3264)	8
Physical Principles (PHYS 2014, 2024)	8
Principles of Botany (BIOL 1134)	4
Total	**30**
Additional Requirements:	
English Elective	3
Calculus I (MATH 2914) or other MATH above MATH 1113	3-4
Junior and Senior Years	
The curriculum for the last two years will depend upon the major area of study chosen by each individual student. Most students choose to major either in biology or chemistry but any field is acceptable. Students pursuing admission to a professional school should seek the advice of a member of the faculty pre-professional committee appropriate to his/her major.	

[1]See General Education requirements (pgs. 78-80).

Pre-Pharmacy

Few professions can surpass pharmacy in abundance of opportunities. In addition to the very large demand for pharmacists to work in the local pharmacies, many professional pharmacists are medical-service representatives, drug salesmen, executive officers of industry and government, and teachers and researchers in medical fields. Dr. Hardcastle serves as the prepharmacy advisor.

Curriculum in Pre-Pharmacy

Freshman Year	**Hours**
English Composition I, II (ENGL 1013, 1023)[1]	6
Principles of Zoology (BIOL 1124)	4
Principles of Botany (BIOL 1134)	4
General Chemistry I, II (CHEM 2124, 2134)	8
College Algebra (MATH 1113)	3

Curriculum in Pre-Pharmacy

Plane Trigonometry (MATH 1203)		3
Social Sciences[1]		6
	Total	**34**
Sophomore Year		
Physical Principles I, II (PHYS 2014, 2024)		8
Organic Chemistry (CHEM 3254, 3264)		8
Accounting Principles I (ACCT 2003)		3
Social Sciences[1]		6
Humanistic, Behavioral, and Social Sciences Electives[2]		6
	Total	**31**

[1]See appropriate alternatives or substitutions in General Education requirements (pgs. 78-80).
[2]Electives in areas such as history, government, sociology, literature, and psychology.

Pre-Physical Therapy

At the earliest convenience after the decision to study in the field, students should contact an institution of their choice and inquire about the prerequisite study program and other requirements for admission into the professional curriculum. Due to the rapidly changing availability of Physical Therapy degree programs and due to changes in entrance requirements, students should seek the most current information available. Searches on the World Wide Web are the best way to get the most current information. An advisor from the biology department can guide the student's registration at Tech when the student has secured a curriculum and entrance requirements for a Physical Therapy school that can meet his or her needs.

SCHOOL OF SYSTEMS SCIENCE

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(501) 968-0677

The School of Systems Science is designed to bring together those courses of study which relate directly to the design, improvement, and operation of the socioeconomic systems of which contemporary society is composed. Systems Science focuses on areas of effectiveness as opposed to orientation along narrow lines of specialization. This philosophy is in keeping with the great need for a new generation of thinkers-professionals who view things in our world not just as objects or phenomena, but as systems and who utilize the systems approach to problems.

Programs of study within the school offer the student an opportunity to specialize in a chosen field of study, while at the same time providing a broad perspective and understanding of the structure, nature, and functions of the real-life systems which will ultimately make use of his/her training. It is also an objective of each curriculum to provide students with a well-rounded general education in addition to the thoroughly professional program within the major. Each curriculum in the School is thus characterized by these facets: (1) contemporary professional training tailored to be commensurate with standards of the professional accrediting institution of the discipline, (2) a basic series of courses in the liberal arts, and (3) seminars and courses in analysis which are designed to train students to view elements of our society from the systems vantage.

Systems Science stresses the need for interdisciplinary efforts toward the solutions of problems. The school is developing educational programs that will help its students excel as professionals in a society which demands an ever increasing understanding of all its activities and interrelationships.

An "undeclared" program is available for freshman and sophomore students who have not selected a specific major. Students work through a general studies coordinator for counseling and guidance.

The School of Systems Science offers programs of study leading to baccalaureate and associate degrees as listed below. Complete requirements for each degree will be found under the respective departmental section. Those students interested in obtaining teacher licensure in conjunction with one of these degrees should also refer to the School of Education section of this catalog.

Bachelor of Science
- Agriculture Business with Horticulture Business and Animal Science options
- Computer Science with Information Science and Computer Science options
- Hospitality Administration
- Mathematics
- Recreation and Park Administration with options in
- Recreation Administration
- Therapeutic Recreation
- Park Administration
- Turf Management
- Interpretive Naturalist options

Bachelor of Science in Electrical Engineering
- Electrical Engineering
- Electrical Engineering with Computer Option

Bachelor of Science in Mechanical Engineering
- Mechanical Engineering

Bachelor of Science in Engineering
- Engineering with electrical and mechanical engineering elective blocks

Associate of Science in Nuclear Technology
- Nuclear Technology

Associate of Science
- Information Technology

Department of Agriculture

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Professors: Collins, Pippin
Associate Professors:
Bateman, Hodgson

The Agriculture Department includes programs of study as follows:

1. A four-year curriculum in agriculture business, with horticulture-business and animal science options, leading to a bachelor of science degree.
2. The courses in pre-veterinary medicine. In this curriculum all requirements are offered for entrance into Louisiana State University, University of Missouri, Oklahoma State University, Tuskegee Institute, and other institutions offering the D.V.M. degree.
3. The courses in pre-forestry. Offerings here are designed to meet requirements for U of A at Monticello, but may be tailored to requirements of other institutions.

Objectives of the department include:

1. Provide a balanced educational program with relatively broad interdisciplinary training as opposed to narrow specialization, thus preparing the student for success in his/her chosen field and in his/her citizenship responsibilities.
2. Serve and assist the student in educational and personal problems through active faculty counseling.
3. Assist the student in development and improvement of leadership abilities through encouragement of active participation in activities of the Agri Club, FFA Day and other extra-curricular activities.

The baccalaureate degree program in agri-business integrates the discipline of agriculture, business, accounting, economics, and finance. Emphasis is placed on management directed toward the farm business and agri-business firms.

Trends in occupations related to agriculture are shifting from production to agri-business services such as management, processing, distribution, and marketing. This creates a need for personnel with a broad background in these areas of training. Our systems concept is geared to integration of disciplines to better prepare graduates for present day needs.

Attractive career opportunities exist in agricultural business firms, banks and other financial agencies, marketing, food processing, extension, soil conservation, forestry, farm and agri-business management, and sales and distribution firms.

The curricula which follow represent the program of study for the four-year degree in agri-business, including the horticulture-business and animal science options, and typical plans of study for those pursuing a pre-forestry, or pre-veterinary medicine program. Students enrolled in programs other than agri-business may want to tailor their curriculum to best meet their individual needs.

Curriculum in Agriculture Business

Freshman Year	Fall	Spring
English Composition I, II (ENGL 1013, 1023)[1]	3	3
Introduction to Biological Science (BIOL 1014)	4	
A Survey of Chemistry (CHEM 1114)		4
Principles of Animal Science (AGAS 1013)	3	
Field Crops (AGPS 1003)		3
Mathematics (MATH 1103)[1]		3
Elective		3
Physical Education[1]	1	
Microcomputer Applications (COMS 2003)		3
Total	**14**	**16**

Curriculum in Agriculture Business

Sophomore Year		
Legal Environment of Business (BUAD 2033)	3	
Introduction to Agriculture Economics (AGBU 2063)	3	
Principles of Agriculture Economics (AGBU 2073)		3
Accounting Principles (ACCT 2003, 2013)	3	3
Business and Professional Speaking (SPH 2173)	3	
Soils (AGSS 2013)		3
Feeds and Feeding (AGAS 2083)		3
Social Sciences[1]	3	3
Physical Education[1]	1	
Total	**16**	**15**
Junior Year		
Agriculture Elective (3000-4000 level)	3	6
Agricultural Marketing (AGBU 4013)	3	
Statistics (MATH 2163)		3
Agricultural Waste Management (AGEG 3413)		3
Plant Pathology (AGPS 3244)	4	
Social Sciences[1]	3	3
Fine Arts[1]	3	
Total	**16**	**15**
Senior Year		
Agri Business Management (AGBU 4003)	3	
Agriculture Finance (AGBU 4023)		3
Humanities[1]	3	
Agricultural Electives (3000 - 4000 level)	6	9
Electives[2]	4	4
Total	**16**	**16**

[1]See General Education requirements (Except ECON 2003).
[2]Recommended electives are SPAN 1014 and SPAN 1024.

Curriculum in Agriculture Business
(Horticulture Business Option)

Freshman Year	**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[1]	3	3
Principles of Botany (BIOL 1134) or Introduction to Biological Science (BIOL 1014)	4	
A Survey of Chemistry (CHEM 1114)		4
General Horticulture (AGPS 1023)		3
Field Crops (AGPS 1003)		3
Mathematics (MATH 1103)[1]	3	
Elective		3
Physical Education[1]	1	
Microcomputer Applications (COMS 2003)		3
Total	**14**	**16**
Sophomore Year		
Introduction to Agriculture Economics (AGBU 2063)	3	
Principles of Agriculture Economics (AGBU 2073)		3
Legal Environment of Business (BUAD 2033)		3
Accounting Principles (ACCT 2003, 2013)	3	3
Business and Professional Speaking (SPH 2173)	3	
Soils (AGSS 2013)		3
Statistics (MATH 2163)	3	
Social Science[1]	3	3

Curriculum in Agriculture Business
(Horticulture Business Option)

Physical Education[1]	1	
Total	**16**	**15**
Junior Year		
Agriculture Elective[2]		3
Electives[2]		4
Agricultural Marketing (AGBU 4013)	3	
Greenhouse Operation and Management (AGPS 3093)		3
Vegetable Growing (AGPS 3063)		3
Plant Pathology (AGPS 3244)	4	
Plant Propagation (AGPS 3043)	3	
Social Science[1]	3	3
Fine Arts[1]	3	
Total	**16**	**16**
Senior Year		
Agri Business Management (AGBU 4003)	3	
Weeds and Weed Control (AGPS 3053)		3
Floriculture (AGPS 3073)	3	
Crop and Garden Insects (AGPS 4103)		3
Small Fruit and Nut Culture (AGPS 3083)	3	
Humanities[1]	3	
Dendrology (BIOL 4044)		4
Agricultural Electives[2]	3	6
Total	**15**	**16**

[1]See General Education requirements (pgs. 78-80). (Except ECON 2003)
[2]Six hours must be 3000 - 4000 level.

Curriculum in Agriculture Business (Animal Science Option)

Freshman Year	**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[1]	3	3
General Chemistry I, II (CHEM 2124, 2134)	4	4
Introduction to Biological Science (BIOL 1014) or Principles of Zoology (BIOL 1124)		4
Principles of Animal Science (AGAS 1013)		3
Principles of Animal Science Laboratory (AGAS 1001)		1
Mathematics (MATH 1103)[1]	3	
Elective	3	
Electives[2]	3	
Physical Education[1]		1
Total	**16**	**16**
Sophomore Year		
Business and Professional Speaking (SPH 2173)	3	
Feeds and Feeding (AGAS 2083)		3
Introduction to Agriculture Economics (AGBU 2063)	3	
Principles of Agriculture Economics (AGBU 2073)		3
Statistics (MATH 2163)		3
Soils (AGSS 2013)		3
Social Science[1]	3	3
Legal Environment of Business (BUAD 2033)	3	
Microcomputer Applications (COMS 2003)	3	
Physical Education[1]	1	
Total	**16**	**15**

Curriculum in Agriculture Business (Animal Science Option)

Junior Year			
Social Science[1]		3	3
Principles of Accounting I, II (ACCT 2003, 2013)		3	3
Beef Cattle Management (AGAS 3013)			3
Light Horse Production (AGAS 3113)		3	
Fine Arts[1]		3	
Microbiology (BIOL 3054)			4
Swine Management (AGAS 3103)		3	
Reproduction in Farm Animals (AGAS 3003)		3	
	Total	**15**	**16**
Senior Year			
Agri Business Management (AGBU 4003)		3	
Agricultural Marketing (AGBU 4013)			3
Humanities[1]			3
Agriculture Finance (AGBU 4023)			3
Animal Nutrition (AGAS 4203)		3	
Electives[2]		6	3
Poultry Science (AGAS 3303, 3323, 3333, or 4303)		3	3
	Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80). (Except ECON 2003)
[2]Six hours must be 3000 - 4000 level

Curriculum in Pre-Forestry

Freshman Year		**Fall**	**Spring**
English Composition I, II (ENGL 1013, 1023)[1]		3	3
General Chemistry I, II (CHEM 2124, 2134)		4	4
Principles of Botany (BIOL 1134)		4	
College Algebra (MATH 1113)		3	
Plane Trigonometry (MATH 1203)			3
Engineering Graphics (ENGR 1002)		2	
Electives[2]			5-6
Physical Education[1]			1
	Total	**16**	**16-17**
Sophomore Year			
Introduction to Forestry (AGPS 1033)		3	
Soils (AGSS 2013)			3
Physical Principles (PHYS 2014)		4	
Introduction to Agriculture Economics (AGBU 2063)		3	
Dendrology (BIOL 4044)			4
Plant Taxonomy (BIOL 3004)			4
Public Speaking (SPH 2003)		3	
Electives[2]		3-4	5-6
Physical Education[1]		1	
	Total	**17-18**	**16-17**

[1]See General Education requirements (pgs. 78-80).
[2]Suggested electives: POLS 2003; HIST 2003, 2013; AGPS 3244; PSY 2003; SOC 1003; PHIL 2003; HLED 1513; PE 2513.

Curriculum in Pre-Veterinary Medicine[1]

Freshman Year		Fall	Spring
English Composition I, II (ENGL 1013, 1023)[4]		3	3
Principles of Animal Science (AGAS 1013)		3	
Feeds and Feeding (AGAS 2083)			3
College Algebra (MATH 1113)		3	
Plane Trigonometry (MATH 1203)			3
Public Speaking (SPH 2003)		3	
Social Science[2, 4]			3
General Chemistry I, II (CHEM 2124, 2134)[3]		4	4
	Total	**16**	**16**
Sophomore Year			
Principles of Biology (BIOL 1114)		4	
Principles of Zoology (BIOL 1124)			4
Genetics (BIOL 3034)			4
Animal Science or Poultry Science[2]			3
Elective[2]		3	
Microcomputer Applications (COMS 2003)		3	
Organic Chemistry (CHEM 3254)		4	
Medical Terminology (AHS 2013)			3
	Total	**14**	**14**
Junior Year			
Principles of Biochemistry (CHEM 3343)		3	
Vertebrate Histology (BIOL 4054)		4	
Microbiology (BIOL 3054)			4
Physical Principles (PHYS 2014, 2024)		4	4
Animal Nutrition (AGAS 4203)			3
Social Science or Humanities[2, 4]		3	3
	Total	**14**	**14**

[1]Most entering pre-veterinary medicine students complete at least three years of preparatory course work or a baccalaureate degree. Students will be permitted to make substitutions to meet requirements of a particular institution. Louisiana State University requires a minimum of 69 hours to be eligible for admission. University of Missouri requires 10 hours of social science and/or humanities.
Tuskegee Institute requires 3 hours of political science, 3 hours of history, and 3 hours of humanities for social science.
[2]In consultation with advisor.
[3]Depending upon previous preparation, student may wish to complete Survey of Chemistry (CHEM 1114) before enrolling in General Chemistry. However, students who subsequently change their major to a program leading to a degree will not receive duplicate credit for CHEM 1114 and CHEM 2124 or 2134.
[4] See General Education requirements (pgs. 78-80).

Department of Computer and Information Science

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Associate Professors:
Hoelzeman, Morell, R. Robison
Assistant Professors:
Middleton, Nezu, S. Robison
Instructor: Cunningham, Moody

The computer and information science curriculum offers two options leading to the bachelor of science degree. Both options enable the student to study computer science in a setting that utilizes a variety of state-of-the-art computer equipment and technology.

The information science option is intended for students pursuing a career as an application programmer/analyst in a business information systems environment, or who plan to continue the study of information systems in graduate school. This option requires substantial course work in business.

The computer science option is intended for students pursuing a career as a systems programmer, an application programmer in a scientific or an engineering

environment, or who plan to continue the study of computer science in graduate school. This option requires substantial course work in mathematics and engineering.

Curriculum in Computer and Information Science (Information Science Option)

Freshman Year		**Fall**	**Spring**
Science[1]		4	4
English Composition I, II (ENGL 1013, 1023)[1]		3	3
Computer and Information Science Orientation (COMS 1403)		3	
Microcomputer Applications (COMS 2003)			3
Foundations of Computer Programming I (COMS 2103)			3
Calculus for Business and Economics (MATH 2243)			3
College Algebra (MATH 1113)		3	
Social Sciences[1]		3	
Physical Education[1]			1
	Total	**16**	**17**
Sophomore Year			
Foundation of Computer Programming II (COMS 2203)		3	
Data Structures (COMS 2213)			3
Computer Organization and Programming (COMS 2223)		3	
Computer Science Elective[2]			3
Technical Communication (ENGL 2053)		3	
Business Statistics (BUAD 2053)			3
Principles of Economics I (ECON 2003)		3	
Business and Professional Speaking (SPH 2173)			3
Accounting Principles I, II (ACCT 2003, 2013)		3	3
Physical Education[1]			1
	Total	**15**	**16**
Junior Year			
Application Program Development I, II (COMS 3033, 3043)		3	3
Database Concepts (COMS 4203)			3
Systems Software and Architecture (COMS 4903)		3	
Social Sciences[1]		3	3
Accounting Elective			3
Visual Programming (COMS 3503)			3
Management and Organizational Behavior (MGMT 3003)		3	
Data Communications and Networks (COMS 4703)		3	
	Total	**15**	**15**

Curriculum in Computer and Information Science (Information Science Option)

Senior Year			
Systems Analysis and Design I, II (COMS 4033, 4043)		3	3
Computer Science Elective (3000-4000 level)			3
Client/Server Systems (COMS 4303)		3	
Principles of Marketing (MKT 3043)		3	
Human Behavior in Organizations (MGMT 4093)			3
Elective (3000-4000 level)		3	3
Humanities[1]		3	
Fine Arts[1]			3
	Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80).
[2]1000-level courses may not be used to satisfy this requirement.

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Curriculum in Computer Science (Computer Science Option)

Freshman Year		**Fall**	**Spring**
English Composition I, II (1013, 1023)[1]		3	3
Computer and Information Science Orientation (COMS 1403)		3	
Social Sciences[1]		3	3
Microcomputer Application (COMS 2003)			3
Science[1]		4	
Foundations of Computer Programming I (COMS 2103)			3
Calculus I & II (MATH 2914, 2924)		4	4
	Total	**17**	**16**
Sophomore Year			
Foundations of Computer Programming II (COMS 2203)		3	
Data Structures (COMS 2213)			3
Computer Organization and Programming (COMS 2223)			3
Computer Science Elective[2]			3
Discrete Math (MATH 2703)		3	
Science[1]		4	
Linear Algebra I (MATH 4003)			3
Business and Professional Speaking (SPH 2173)			3
Digital Logic Design (ENGR 2134)		4	
Technical Communication (ENGL 2053)		3	
Physical Education[1]			1
	Total	**17**	**16**
Junior Year			
Application Program Development I, II (COMS 3033, 3043)		3	3
Accounting Principles I, II (ACCT 2003, 2013)		3	3
Advanced Data Structures (COMS 3213)		3	
Operating Systems (COMS 3703)		3	
Organization of Programming Languages (COMS 4103)			3
Humanities[1]			3
Fine Arts[1]		3	
Physical Education[1]			1
Database Concepts (COMS 4203)			3
	Total	**15**	**16**
Senior Year			
Systems Analysis and Design I, II (COMS 4033, 4043)		3	3
Compiler Design (COMS 4403)		3	

Curriculum in Computer Science (Computer Science Option)

Computer Science Elective (3000-4000 level)		3
Microprocessor System Design (ENGR 3133)	3	
Digital Systems Lab (ENGR 4111)		1
Applied Statistics I, II (MATH 3153, 4153)	3	3
Social Sciences[1]	3	3
Total	**15**	**13**

[1]See General Education requirements (pgs. 78-80).
[2]1000-level courses may not be used to satisfy this requirement.

Associate of Science in Information Technology

The Associate of Science in Information Technology program enables students to develop skills in the areas of web processing, databases, networking, programming, and various operating systems. These skills enable students to seek positions within the information technology industry.

Curriculum in Information Technology Associate of Science Degree

Freshman Year		
First Semester		**Hours**
English Composition I (ENGL 1013) or Honors Composition I (ENGL 1043)		3
Computer and Information Science Orientation (COMS 1403)		3
Microcomputer Applications (COMS 2003)		3
College Algebra (MATH 1113)[2]		3
Social Science[1]		3
	Total	**15**
Second Semester		
English Composition II (ENGL 1023) or Honors Composition II (ENGL 1053)		3
Foundations of Computer Programming I (COMS 2103)		3
Introduction to Databases (COMS 2233)		3
Web Publishing I (COMS 1333)		3
Social Science[1]		3
	Total	**15**
Sophomore Year		
First Semester		
Technical Communications (ENGL 2053)		3
Foundations of Computer Programming II (COMS 2203)		3
Computer Networks (COMS 2703)		3
Computer Science Elective		3
Introduction to Physical Science (PHSC 1013)		3
Physical Science Laboratory (PHSC 1021)		1
	Total	**16**
Second Semester		
Business and Professional Speaking (SPH 2173)		3
Computer Science Electives		9
General Electives		3
	Total	**15**

[1]See General Education requirements (pgs. 78-80).
[2]The mathematics requirement may be fulfilled by taking MATH 1113 or any higher level mathematics course.

University Center

In addition to the program offered on the Russellville campus, Arkansas Tech University offers the junior- and senior-level courses leading to a baccalaureate degree in computer science (information science option only) through the University Center located on the campus of Westark College in Fort Smith, Arkansas. The program is designed so that freshman- and sophomore-level courses are provided by Westark College, and the junior-and senior-level courses leading to the four-year degree are provided by Arkansas Tech University.

For further information, contact the Arkansas Tech University program director at the University Center (788-7901) or the Department of Computer and Information Science at Arkansas Tech University (968-0355).

University Center Curriculum In Computer Science Information Science Option (Westark Campus)

Freshman Year		**Fall**	**Spring**
Computers and Their Applications (CIS 1203)		3	
Computer Programming I, II (CISR 1223, 1803)		3	3
English Composition I, II (1203, 1213)[1]		3	3
College Algebra (MATH 1403)[1]		3	
Science		4	4
Microcomputer Software Applications (CISP 2033)		3	
Social Sciences[1]		3	
Physical Education[1]		1	
	Total	**16**	**17**
Sophomore Year			
Data Structures (CISR 2313)		3	
Survey of Calculus (MATH 2403)		3	
Principles of Accounting I, II (ACCT 2803, 2813)		3	3
Social Sciences[1]		3	
Humanities[1]		3	
Assembler Programming (CISR 2803)		3	
Introduction to Speech Communication (SPCH 1203)		3	
Business Statistics (BUGE 2963)		3	
Principles of Economics (Macro) (ECON 2803)		3	
Physical Education[1]		1	
	Total	**15**	**16**
Junior Year			
Application Program Development I, II (COMS 3033, 3043)		3	3
Visual Programming (COMS 3503)		3	
Database Concepts (COMS 4203)		3	
Technical Writing (RHET 3316)		3	
Data Communications & Networks (COMS 4703)		3	
System Software and Architecture (COMS 4903)		3	
Approved Business Elective (3000-4000 level)		3	
Approved Accounting Elective (3000-4000 level)		3	
Social Sciences[1]		3	
	Total	**15**	**15**
Senior Year			
Systems Analysis and Design I, II (COMS 4033, 4043)		3	3
Computer Science Elective (3000-4000 level)		3	3
Approved Business Elective (3000-4000 level)		3	3
Fine Arts[1]		3	
Client/Server Systems (COMS 4303)		3	
General Elective (3000-4000 level)		3	3
	Total	**15**	**15**

[1]See General Education requirements (pgs. 78-80).

DEPARTMENT OF ENGINEERING

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Associate Professors: Helmer, Krohn, Nelson, Richards
Assistant Professors: Buford, Clark, Fithen, Goswami
Instructors: S. Apple, Hartman

The Department of Engineering offers four-year degree programs leading to the degrees Bachelor of Science in Engineering (BSEg), Bachelor of Science in Electrical Engineering (BSEE),and Bachelor of Science in Mechanical Engineering (BSME), and a two-year degree in Nuclear Technology. Within the BSEg program, students may choose to concentrate their studies in either the electrical or mechanical area. Within the BSEE program, students may choose to complete the traditional program or the computer option. The program leading to the Bachelor of Science in Engineering (BSEg) degree is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

The mission of the Department of Engineering at Arkansas Tech University is to develop and maintain accredited programs leading to a bachelor of science degree in various fields of engineering. The department is committed to providing its students with a positive atmosphere in which to learn the fundamentals of engineering practice including engineering science and design. The department's programs emphasize the need for continued learning throughout every engineer's career. Through its faculty and activities, the department encourages involvement in professional activities, experimental learning, and professional licensure.

Engineering Programs

The department's engineering programs are designed to help satisfy the engineering manpower needs of industry in Arkansas and the mid-south region. The objectives of the program are to produce graduates with a professional attitude and approach to problem solving, well educated in the basics of engineering. The required courses provide a basic foundation in engineering with a strong cross-disciplinary component and emphasis on engineering design.

The emphasis on cross-disciplinary work and engineering design begins in the first year with the Introduction to Engineering course in which typical problems from both areas (Electrical and Mechanical engineering) are presented in a manner appropriate to the freshman student. An introduction to the profession of engineering including licensing, registration, and the Engineering Code of Ethics is included in this first course. The course concludes with a design competition to introduce the students to engineering design. The cross-disciplinary training continues in the second year through the basic courses of both a traditional EE and ME degree. Engineering design is integrated into the curricula by project work in courses such as Digital Logic Design and Mechanics of Materials. In the junior year, the student begins to concentrate in either the electrical or mechanical area while continuing to take courses in the other area. Design is incorporated in several of the Junior level courses by means of open-ended problems, team projects, and individual projects. The senior year is composed of mainly discipline specific courses with more design experiences via team and individual projects. The curriculum culminates in the senior design project in which individuals or teams of students bring together knowledge from many classes and complete a project design including both an oral and written report addressing all aspects of the design process including safety, environmental concerns, reliability, longevity, ease of manufacturing, maintainability, and cost effectiveness.

Pre-Professional Curriculum

Prior to enrolling in any 3000- or 4000-level engineering courses, students must complete a pre-professional curriculum containing preparatory courses normally taken during the first three semesters. The pre-professional curriculum is composed of the following courses: ENGL 1013 and 1023 (or equivalent), MATH 2914, 2924, CHEM 2124, and PHYS 2114.

Satisfactory completion of the pre-professional curriculum is defined as a grade of "C" or better in each course or, alternatively, grade point average of 2.20 or greater for the courses comprising the pre-professional curriculum. Students should meet with

their advisor during the semester in which they anticipate completing the pre-professional curriculum to complete the procedure for admittance to upper-level engineering classes. By that time the student is expected to declare a major within engineering (BSEg, BSEE, BSME).

Most graduates of the engineering programs go directly into the work force as practicing engineers. Many are placed in the numerous small manufacturers in the River Valley area. Others have obtained positions with larger companies such as Texas Instruments, Motorola, and Entergy. A number of graduates have elected to attend one of many different graduate schools specializing in disciplines such as engineering (electrical, mechanical, industrial or nuclear), mathematics, physics and business.

The following curricula represent the programs of study for the bachelor of science degrees as indicated.

Bachelor of Science in Electrical Engineering (BSEE)

Freshman Year		**Fall**	**Spring**
Introduction To Engineering (ENGR 1012)		2	
Engineering Graphics (ENGR 1002)		2	
Physical Education[1]		1	
Biological Science[1]		4	
English Composition I, II (ENGL 1013, 1023)[1]		3	3
Calculus I, II (MATH 2914, 2924)		4	4
Foundations of Computer Programming I (COMS 2103)		3	
General Chemistry (CHEM 2124)		4	
Principles of Economics I (ECON 2003)		3	
	Total	**16**	**17**
Sophomore Year			
Calculus III (MATH 2934)		4	
Statics (ENGR 2013)		3	
Fine Arts[1]		3	
Social Sciences[1]		3	
Physics I, II (PHYS 2114, 2124)		4	4
Digital Logic Design (ENGR 2134)		4	
Electric Circuits I (ENGR 2103)		3	
Dynamics (ENGR 2033)		3	
Differential Equations (MATH 3243)		3	
	Total	**17**	**17**
Junior Year			
Electric Circuits II (ENGR 2113)		3	
Electric Circuits Laboratory (ENGR 2111)		1	
Mechanics of Materials (ENGR 3013)		3	
Physical Education[1]		1	
Engineering Modeling & Design (ENGR 3003)		3	
Applied Statistics (MATH 3153)		3	
Humanities[1]		3	
Microcontrollers (ENGR 3223)		3	
Signals and Systems (ENGR 3123)		3	
Electronics I (ENGR 3103)		3	
Electromagnetics (ENGR 3143)		3	
Electrical Machines (ENGR 3153)		3	
Electronics Lab (ENGR 3131)		1	
Electrical Machines Lab (ENGR 3151)		1	
	Total	**17**	**17**
Senior Year			

Bachelor of Science in Electrical Engineering (BSEE)

Communications Systems I (ENGR 4143)	3	
Engineering Design (ENGR 4202)	2	
Electronics II (ENGR 4103)	3	
Digital Signal Processing (ENGR 4113)	3	
Thermodynamics I (ENGR 3313)	3	
Social Science[1]	33	
Digital Systems Laboratory(ENGR 4111)	1	
Modern Control Systems (ENGR 4314)	4	
Communications Systems II (ENGR 4153)	3	
ASIC Design (ENGR 4133)	3	
Design Project (ENGR 4193)	3	
Total	**17**	**17**

[1]See General Education requirements (pgs. 78-80).

Bachelor of Science in Electrical Engineering-Computer Option (BSEE)

Freshman Year	**Fall**	**Spring**
Introduction To Engineering (ENGR 1012)	2	
Biological Science[1]	4	
Foundations of Computer Programming I (COMS 2103)	3	
Physical Education[1]	1	
English Composition I, II (ENGL 1013, 1023)[1]	3	3
Calculus I, II (MATH 2914, 2924)	4	4
Principles of Economics I (ECON 2003)	3	
General Chemistry (CHEM 2124)		4
Foundations of Computer Programming II (COMS 2203)	3	
Total	**17**	**17**
Sophomore Year		
Data Structures (COMS 2213)	3	
Calculus III (MATH 2934)	4	
Statics (ENGR 2013)	3	
Digital Logic Design (ENGR 2134)	4	
Physics I, II (PHYS 2114, 2124)	4	4
Physical Education[1]	1	
Machanics of Materials (ENGR 3013)	3	
Electric Circuits I (ENGR 2103)		3
Computer Organization and Programming (COMS 2223)	3	
Differential Equations (MATH 3243)		3
Total	**18**	**17**
Junior Year		
Electric Circuits II (ENGR 2113)	3	
Electric Circuits Laboratory (ENGR 2111)	1	
Operating Systems (COMS 3703)	3	
Applied Statistics (MATH 3153)	3	
Social Science[1]	3	
Fine Arts[1]	3	
Humanities[1]	3	
Microprocessor Systems (ENGR 3133)	3	
Digital Systems Lab (ENGR 4111)	1	
Signals and Systems (ENGR 3123)	3	
Electronics I (ENGR 3103)	3	
Electronics Lab (ENGR 3131)	1	
Thermodynamics I (ENGR 3313)	3	
Total	**16**	**17**

Bachelor of Science in Electrical Engineering-Computer Option (BSEE)

Senior Year			
Communications Systems I (ENGR 4143)		3	
Engineering Design (ENGR 4202)		2	
Electronics II (ENGR 4103)		3	
Digital Signal Processing (ENGR 4113)		3	
Data Communications and Networks (COMS 4703)		3	
Social Science[1]		33	
Modern Control Systems (ENGR 4314)		4	
Communications Systems II (ENGR 4153)		3	
ASIC Design (ENGR 4133)		3	
Design Project (ENGR 4193)		3	
	Total	**17**	**16**

[1]See General Education requirements (pgs. 78-80).

Bachelor of Science in Mechanical Engineering (BSME)

Freshman Year		**Fall**	**Spring**
Introduction To Engineering (ENGR 1012)		2	
Engineering Graphics (ENGR 1002)		2	
Biological Science[1]		4	
Physical Education[1]		1	
English Composition I, II (ENGL 1013, 1023)[1]		3	3
Calculus I, II (MATH 2914, 2924)		4	4
Principles of Economics I (ECON 2003)			3
General Chemistry (CHEM 2124)			4
Foundations of Computer Programming I (COMS 2103)		3	
	Total	**16**	**17**
Sophomore Year			
Calculus III (MATH 2934)		4	
Statics (ENGR 2013)		3	
Engineering Materials (ENGR 2023)		3	
Social Science[1]		3	
Physics I, II (PHYS 2114, 2124)		4	4
Mechanics of Materials (ENGR 3013)			3
Electric Circuits I (ENGR 2103)			3
Dynamics (ENGR 2033)			3
Differential Equations (MATH 3243)			3
	Total	**17**	**16**
Junior Year			
Electric Circuits II (ENGR 2113)		3	
Electric Circuits Laboratory (ENGR 2111)		1	
Fine Arts[1]		3	
Mechanical Lab I (ENGR 3442)		2	
Physical Education[1]		1	
Thermodynamics I (ENGR 3313)		3	
Applied Statistics (MATH 3153)		3	
Social Science[1]		3	
Humanities[1]		3	
Electronics I (ENGR 3103)			3
Engineering Modeling & Design (ENGR 3003)			3
Engineering Elective[3]		3	
Engineering Laboratory Elective(s)[2]		2	
	Total	**16**	**17**

Bachelor of Science in Mechanical Engineering (BSME)

Senior Year		
Engineering Design (ENGR 4202)	2	
Heat Transfer (ENGR 4443)	3	
Thermodynamics II (ENGR 4433)	3	
Mechanics of Fluids and Hydraulics (ENGR 4403)	3	
Control Systems I (ENGR 4303)	3	
Fundamentals of Mechanical Design (ENGR 3413)	3	
Social Science[1]	3	
Engineering Elective[3]	6	
Mechanical Laboratory II (ENGR 4442)	2	
Machine Component Design (ENGR 4423)	3	
Design Project (ENGR 4493)	3	
Total	**17**	**17**

[1]See General Education requirements (pgs. 78-80).
[2]ENGR 3131 - Electronics Lab & ENGR 3151 - Electrical Machines Lab OR ENGR 3512 - Radiation Detection Lab.
[3]3000-level or above ENGR course with minimum of six (6) hours at the 4000-level and approval of advisor.

Bachelor of Science in Engineering (BSEg)

Freshman Year	**Fall**	**Spring**
Introduction To Engineering (ENGR 1012)	2	
Engineering Graphics (ENGR 1002)	2	
Biological Science[1]	4	
Physical Education[1]	1	
English Composition I, II (ENGL 1013, 1023)[1]	3	3
Calculus I, II (MATH 2914, 2924)	4	4
Principles of Economics I (ECON 2003)		3
General Chemistry (CHEM 2124)		4
Foundations of Computer Programming I (COMS 2103)	3	
Total	**16**	**17**
Sophomore Year		
Calculus III (MATH 2934)	4	
Statics (ENGR 2013)	3	
Engineering Materials (ENGR 2023)	3	
Digital Logic Design (ENGR 2134)	4	
Physics I, II (PHYS 2114, 2124)	4	4
Mechanics of Materials (ENGR 3013)		3
Electric Circuits I (ENGR 2103)		3
Dynamics (ENGR 2033)		3
Differential Equations (MATH 3243)		3
Total	**18**	**16**
Junior Year		
Electric Circuits II (ENGR 2113)	3	
Electric Circuits Laboratory (ENGR 2111)	1	
Mechanical Laboratory I (ENGR 3442)	2	
Physical Education[1]	1	
Thermodynamics I (ENGR 3313)	3	
Applied Statistics (MATH 3153)	3	
Engineering Electives[2]	3	3
Social Sciences[1]	3	
Engineering Modeling & Design (ENGR 3003)	3	
Electrical Machines (ENGR 3153)		3

Electronics I (ENGR 3103)			3
Engineering Laboratory Elective[2]			2
	Total	**16**	**17**
Senior Year			
Engineering Design (ENGR 4202)		2	
Mechanics of Fluids and Hydraulics (ENGR 4403)		3	
Fine Arts[1]		3	
Engineering Electives[2]		6	3
Social Sciences[1]		3	3
Humanities[1]		3	
Control Systems (ENGR 4303 OR ENGR 4314)[2]			3/4
Engineering Laboratory Elective			
(ENGR 4442 OR ENGR 4111)[2]			2/1
Design Project (ENGR 4193 OR ENGR 4493)			3
	Total	**17**	**17**

[1]See General Education requirements (pgs. 78-80).
[2]See engineering elective requirements below.

Engineering Electives

Each student completing the BSEg degree must complete 18 semester hours of engineering electives, with a minimum of 10 semester hours of 4000-level engineering courses. In selecting courses to fulfill the engineering elective hours, the student shall work with his advisor to develop a cohesive set of courses within one of the concentration areas below. Choice of engineering electives is subject to the approval of the student's advisor and department head.

Electrical Block

ENGR 3123 Signals and Systems
ENGR 3131 Electronics Lab
ENGR 3133 Microprocessor Systems Design
ENGR 3143 Electromagnetics
ENGR 3151 Electrical Machines Lab
ENGR 3223 Microcontrollers
ENGR 4103 Electronics II
ENGR 4111 Digital Systems Lab
ENGR 4113 Digital Signal Processing
ENGR 4133 ASIC Design
ENGR 4143 Communication Systems I
ENGR 4153 Communication Systems II

Mechanical Block

ENGR 3131 Electronics Lab
ENGR 3151 Electrical Machines Lab
ENGR 3403 Machine Dynamics and Vibrations
ENGR 3413 Fundamentals of Mechanical Design
ENGR 3503 Basic Nuclear Engineering
ENGR 3512 Radiation Detection Lab
ENGR 3523 Radiation Health Physics
ENGR 4323 Power Plant Systems
ENGR 4413 Finite Element Analysis
ENGR 4423 Machine Component Design
ENGR 4433 Thermodynamics II
ENGR 4442 Mechanical Laboratory II
ENGR 4443 Heat Transfer
ENGR 4463 HVAC Design

Substitution of other courses into the above blocks may be considered on an

individual basis. Such substitutions will require the approval of the student's advisor and the head of the department.

Transfer of Credit

Students wishing to transfer into one of the programs offered by the Department of Engineering are urged to contact the department head as soon as possible to reduce the possibility of taking non-transferable courses. Course work taken at another institution must meet the requirements of the Arkansas Tech University transfer policies and, in addition, is subject to the current transfer policy of the Department of Engineering. Contact the department for the latest course transfer information and policy.

Students planning to transfer to another university can, in most cases, complete the first two years of work at Arkansas Tech University. Students who plan to transfer should consult with the school to which they plan to transfer to coordinate details.

Nuclear Technology

The department also offers a two-year program leading to the Associate of Science in Nuclear Technology (ASNT). This degree is designed to allow the student to obtain the knowledge base and training necessary to work in one of many areas in the nuclear field. While many technology degrees, especially at the associate's level, are seen as less rigorous paths, the ASNT degree at Arkansas Tech includes most of the same courses as the first two years of the engineering programs.

Graduates of the program leading to the Associate of Science degree in Nuclear Technology will find employment in many areas of the nuclear industry. Many of our past ASNT graduates have gone on to obtain bachelors degrees in engineering or the physical sciences either at Tech or at other institutions.

Curriculum in Nuclear Technology

Freshman Year	**Fall**	**Spring**
Introduction To Engineering (ENGR 1012)	2	
Engineering Graphics (ENGR 1002)	2	
Social Sciences[1]	3	
General Chemistry (CHEM 2124)	4	
English Composition I, II (ENGL 1013, 1023)[1]	33	
Calculus I, II (MATH 2914, 2924)	44	
Engineering Materials (ENGR 2023)		3
Technical Elective[2]	6	
Physical Education[1]		1
Total	**18**	**17**
Sophomore Year		
Statics (ENGR 2013)	3	
Calculus III (MATH 2934)	4	
Basic Nuclear Engineering (ENGR 3503)	3	
Thermodynamics I (ENGR 3313)		3
General Physics I, II (PHYS 2114, 2124)	4	4
Dynamics (ENGR 2033)		3
Radiation Detection Laboratory (ENGR 3512)	2	
Electric Circuits I (ENGR 2103)		3
Radiation Health Physics (ENGR 3523)		3
Physical Education[1]	1	
Total	**17**	**16**

[1]See General Education requirements (pgs. 78-80).
[2]Mathematics, science, or engineering elective must be approved by an Engineering advisor and the Engineering Department Head.

Department of Mathematics

Dr. John W. Watson, Head
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(501) 968-0602
John.Watson@mail.atu.edu
Professors: Carnahan, Hamm, Keisler, Watson
Associate Professors: Amirkhanian, S. Jordan, Shores
Assistant Professors: J. Guerra, K. Pearson
Instructors: Felkins, Horton, S.M. Jordan, Sherrill, Tibbs

The Department of Mathematics offers a four-year program in mathematics that leads to the bachelor of science degree. The curriculum is designed to meet the needs of three groups of students: (1) those who plan to seek employment in business, industry, or government, (2) those who plan to attend graduate school to continue their study of mathematics or a related field, and (3) those who plan to be secondary school teachers.

Students majoring in mathematics are encouraged to use their elective hours to complete a second major, or at least a concentration of 18 hours or more, in the field of their choice. For example, students interested in computer science are advised to complete the following courses: COMS 1403, 2003, 2103, 2203, 2213, and two additional courses selected from 3213, 3503, 3803, and 4203. Students interested in business electives are advised to complete BUAD 2003, 2033, ACCT 2003, 2013, and ECON 2003 and 2013. For other areas of interest, students should consult their advisor to arrange a plan of study.

Students who plan to attend graduate school in mathematics or a related field are advised to complete additional upper-level mathematics courses beyond the minimal degree requirements.

The curriculum in mathematics for teacher licensure is found in the School of Education section of this catalog.

Curriculum in Mathematics

Freshman Year		Hours
Calculus I, II (MATH 2914, 2924)		8
English Composition I, II (ENGL 1013, 1023)[1]		6
Social Sciences[1]		6
Introduction to Biological Science (BIOL 1014) [1]		4
Physical Education[1]		2
Electives		6
	Total	**32**
Sophomore Year		
Calculus III (MATH 2934)		4
Discrete Mathematics (MATH 2703)		3
Differential Equations I (MATH 3243)		3
General Physics I, II (PHYS 2114, 2124)		8
Foundations of Computer Programming I (COMS 2103)		3
Social Sciences[1]		6
Electives[2]		3
	Total	**30**
Junior Year		
Intro to Analysis (MATH 3203)		3
Applied Statistics I (MATH 3153)		3
Math Modeling I (MATH 3163)		3
Mathematics Electives[3]		3
Fine Arts/Humanities[1]		6
Electives[2]		12
	Total	**30**
Senior Year		
Abstract Algebra I (MATH 4033)		3
Linear Algebra I (MATH 4003)		3
Math Modeling II (MATH 4163)		3
Mathematics Electives[3]		3
Electives[2]		20
	Total	**32**

1See General Education requirements (pgs. 78-80).
[2]At least 40 of the total hours required for graduation must be 3000-4000 level courses.
[3]3000 - 4000 level math elective. MATH 3033, 4703, and 4772 may not be used to satisfy this requirement. MATH 4993 may not be used without prior approval of the department head.

Department of Parks, Recreation and Hospitality Administration

Dr. Theresa A. Herrick, Head
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Associate Professor: T. Herrick
Assistant Professors:
Bishop, McMahan, Montgomery,
Paassen, Powell

The Department of Parks, Recreation and Hospitality Administration offers majors in ***Recreation and Park Administration and Hospitality Administration***.

The ***Recreation and Park Administration*** major provides specialized education that helps prepare students for supervisory and administrative positions in federal, state, and local recreation and park agencies as well as commercial recreation and tourism organizations.

The ***Hospitality Administration*** major provides a specialized education that helps prepare students for management positions in hotels, restaurants, and other hospitality organizations.

Recreation and Park Administration

This program is designed to prepare students for management careers in private and public recreation agencies or park systems. A broad background in the behavioral and natural sciences is required with major emphasis on resource management and the delivery of leisure services to diverse populations. Specialized course work in biological sciences and business management aid in natural resource decision making. This provides a base for professional courses in planning, design, and operation of park and recreation facilities. A career in recreation administration, park administration, therapeutic recreation, turf management or interpretation requires a basic understanding of human behavior and the challenges of contemporary society. Due to the multidisciplinary nature of the career field, a student is required to choose courses from several related fields, based on professional interest. A comprehensive general education is complemented with a core of professional courses. The ***Bachelor of Science*** in Recreation and Park Administration offers five emphasis of professional preparation:

Recreation Administration Option prepares students to work in community and agency settings and commercial recreation businesses. Programming and people management are major areas of expertise.

Recreation Administration Emphasis

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Mathematics[1]		3
Sciences[1]		8
Computer Science (COMS 1003 or 2003)		3
Orientation to Parks, Recreation, and Hospitality Administration (RP 1001)		1
Principles of Recreation and Parks (RP 1013)		3
Social Sciences (PSY 2003 and ECON 2003)		6
Physical Education/Recreation Activity[1]		1
	Total	**31**
Sophomore Year		
Social Sciences[1]		6
Public Speaking (SPH 2003)		3
Introduction to Library Resources (LBMD 2001)		1
First Aid (PE 2513)		3
Recreation Programming (RP 2003)		3
Landscape Materials and Construction (RP 2013)		3
Physical Education/Recreation Activity[1]		1
Approved Electives[2]		12
	Total	**32**
Junior Year		
Fine Arts/Humanities[1]		6
Developmental Psychology I (PSY 3063)		3
Recreation for Special Populations (RP 3013)		3
Site Planning and Design (RP 3034)		4
Work Experience I (RP 3043)		3
Outdoor Education (RP 3063)		3
Commercial Recreation (RP 3033)		3
Approved Electives[2]		6
	Total	**31**
Senior Year		
Internship Preparation (RP 4001)		1
Recreation and Park Administration (RP 4013)		3
Research Methods (RP 4023)		3
Recreation Law and Policy (RP 4103)		3
Personnel Management in Parks, Recreation, and Hospitality Administration (RP 4113)		3
Internship (RP 4116)		6
Hospitality Marketing and Sales (HA 4013)		3
Departmental Electives[2]		8
	Total	**30**

[1]See General Education requirements (pgs. 78-80).
[2]See Departmental Advisor.

Therapeutic Recreation Emphasis prepares students who wish to prepare for a career as a Certified Therapeutic Recreation Specialist (CTRS) working with special populations in clinical and community recreation environments. The specialized TR emphasis prepares students for national certification under guidelines established by the National Council for Therapeutic Recreation Certification.

Therapeutic Recreation Emphasis

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Mathematics[1]		3
Sciences (BIOL 1014)[1]		8
Computer Science (COMS 1003 or 2003)		3
Orientation to Parks, Recreation, and Hospitality Administration (RP 1001)		1
Principles of Recreation and Parks (RP 1013)		3
Social Sciences (PSY 2003 and ECON 2003)		6
Physical Education/Recreation Activity[1]		2
	Total	**32**
Sophomore Year		
Social Sciences[1]		6
Public Speaking (SPH 2003)		3
Fine Arts/Humanities[1]		6
Introduction to Library Resources (LBMD 2001)		1
First Aid (PE 2513)		3
Introduction to Rehabilitation Services (RS 2003)		3
Recreation Programming (RP 2003)		3
Basic Human Anatomy and Physiology (BIOL 2004)		4
Medical Terminology (AHS 2013)		3
	Total	**32**
Junior Year		
Abnormal Psychology (PSY 3003)		3
Developmental Psychology I (PSY 3063)		3
Recreation for Special Populations (RP 3013)		3
Developmental Psychology II (PSY 3163)		3
Commercial Recreation (RP 3033)		3
Site Planning and Design (RP 3034)		4
Outdoor Education (RP 3063)		3
Work Experience I (RP 3043)		3
Internship Preparation (RP 4001)		1
Principles and Techniques of Therapeutic Recreation (RP 4073)		3
Approved Electives (Human Services)[3]		1
	Total	**30**
Senior Year		
Principles and Methods of Adapted Physical Education (PE 4103)		3
Recreation and Park Administration (RP 4013)		3
Research Methods (RP 4023)		3
Recreation Law and Policy (RP 4103)		3
Personnel Management in Parks, Recreation, and Hospitality Administration (RP 4113)		3
Internship (RP 4116)[2]		6
Therapeutic Recreation Assessment and Documentation (RP 4173)		3
Administration and Operation of Therapeutic Recreation Programs (RP 4273)		3
Interventions in Therapeutic Recreation (RP 4373)		3
	Total	**30**

[1]See General Education requirements (pgs. 78-80).
[2]Must have RP 3013, 4073, 4173, 4273 and 4373 prior to RP 4116.
[3]See Departmental Advisor for list of approved courses.

Park Administration Emphasis prepares students to manage large parks, resource areas and visitor facilities. Planning and management aspects of land and water resources are taught, with private and public recreation and park systems as targeted work careers.

Park Administration Emphasis

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Mathematics[1]		3
Sciences (CHEM 1114 or GEOL 1014 and BIOL 1124 or 1134)		8
Computer Science (COMS 1003 or 2003)		3
Social Sciences (PSY 2003 and ECON 2003)		6
Orientation to Parks, Recreation, and Hospitality Administration (RP 1001)		1
Principles of Recreation and Parks (RP 1013)		3
	Total	**30**
Sophomore Year		
Social Sciences[1]		6
Public Speaking (SPH 2003)		3
Recreation Programming (RP 2003)		3
First Aid (PE 2513)		3
Physical Education/Recreation Activity[1]		2
Introduction to Library Resources (LBMD 2001)		1
Landscape Materials and Construction (RP 2013)		3
Fine Arts/Humanities[1]		3
Departmental Electives[2]		4
Approved Electives[2]		3
	Total	**31**
Junior Year		
Fine Arts/ Humanities[1]		3
Commercial Recreation (RP 3033)		3
Work Experience I (RP 3043)		3
Outdoor Education (RP 3063)		3
Recreation for Special Populations (RP 3013)		3
Site Planning and Design (RP 3034)		4
Interpretive Methods (RP 3093)		3
Natural Resource Management and Planning (RP 3053)		3
Approved Electives[2]		6
	Total	**31**
Senior Year		
Internship Preparation (RP 4001)		1
Recreation and Park Administration (RP 4013)		3
Research Methods (RP 4023)		3
Park Operations (RP 4063)		3
Personnel Management in Parks, Recreation and Hospitality Administration (RP 4113)		3
Recreation Law and Policy (RP 4103)		3
Internship (RP 4116)		6
Departmental Electives[2]		4
Hospitality Marketing and Sales (HA 4013)		3
Approved Electives[2]		3
	Total	**32**

[1]See General Education requirements (pgs. 78-80).
[2]See Departmental Advisor.

Turf Management Emphasis prepares students to meet the expanding market for turfgrass specialists in parks, recreation playfields and golf courses. Specialized study in this emphasis will prepare students for the Arkansas State Plant Board Test for Commercial Applicator Certification.

Turf Management Emphasis

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Mathematics[1]		3
Sciences (CHEM 1114 and BIOL 1134)		8
Physical Education/Recreation Activity[1]		2
Orientation to Parks, Recreation, and Hospitality Administration (RP 1001)		1
Principles of Recreation and Parks (RP 1013)		3
Computer Science (COMS 1003 or 2003)		3
General Horticulture (AGPS 1023)		3
Introduction to Library Resources (LBMD 2001)		1
	Total	**30**
Sophomore Year		
Social Sciences[1]		6
Social Sciences (PSY 2003 and ECON 2003)		6
Fine Arts/Humanities[1]		6
Landscape Materials and Construction (RP 2013)		3
Recreation Programming (RP 2003)		3
Public Speaking (SPH 2003)		3
Environmental Chemistry (CHEM 2143)		3
	Total	**30**
Junior Year		
Recreation for Special Populations (RP 3013)		3
Commercial Recreation (RP 3033)		3
Site Planning and Design (RP 3034)		4
Work Experience I (RP 3043)		3
Natural Resource Management & Planning (RP 3053)		3
Outdoor Education (RP 3063)		3
Soils (AGSS 2013)		3
Sports Facilities Planning & Design (RP 3773)		3
Recreation and Park Administration (RP 4013)		3
Turf Management - Basic Chemical Usage (RP 3783)		3
Approved Electives[2]		2
	Total	**33**
Senior Year		
Internship Preparation (RP 4001)		1
Research Methods (RP 4023)		3
Park Operations (RP 4063)		3
Recreation Law and Policy (RP 4103)		3
Personnel Management in Parks, Recreation and Hospitality Administration (RP 4113)		3
Internship (RP 4116)		6
Turf Management - Climatic Regions & Cultures (RP 4773)		3
Turf Management - Equipment (RP 4783)		3
Hospitality Facilities Management (HA 4023)		3
Resort Management (RP 4093)		3
	Total	**31**

[1]See General Education requirements (pgs. 78-80).
[2]See Departmental Advisor.

Interpretive Naturalist Emphasis offers a curriculum that utilizes communication skills and interpretive methods courses to provide training for those wanting to find employment with various interpretive and outdoor educational programs of private, state, and federal agencies.

Interpretive Naturalist Emphasis

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Mathematics[1]		3
Physical Geology (GEOL 1014) and Principles of Zoology (BIOL 1124)		8
Computer Science (COMS 1003 or 2003)		3
Social Sciences (PSY 2003 and ECON 2003)		6
Orientation to Parks, Recreation and Hospitality Administration (RP 1001)		1
Principles of Recreation and Parks (RP 1013)		3
	Total	**30**
Sophomore Year		
Social Sciences[1]		6
Public Speaking (SPH 2003)		3
Recreation Programming (RP 2003)		3
First Aid (PE 2513)		3
Physical Education/Recreation Activity[1]		2
Intro to Library Resources (LBMD 2001)		1
Principles of Botany (BIOL 1134)		4
Survey of Chemistry (CHEM 1114)		4
Principles of Biology (BIOL 1114)		4
	Total	**30**
Junior Year		
Fine Arts/Humanities[1]		6
Commercial Recreation (RP 3033)		3
Work Experience I (RP 3043)		3
Outdoor Education (RP 3063)		3
Recreation for Special Populations (RP 3013)		3
Site Planning and Design (RP 3034)		4
Interpretive Methods (RP 3093)		3
Principles of Ecology (BIOL 3114)		4
Approved Electives (BIOL Elect. 3000-4000 level)[2]		3
	Total	**32**
Senior Year		
Internship Preparation (RP/HA 4001)		1
Recreation and Park Administration (RP 4013)		3
Research Methods (RP 4023)		3
Recreation & Park Administration Major Elective (RP 3053 or RP 4053)		3
Personnel Management in Parks Recreation and Hospitality Admin. (RP 4113)		3
Recreation Law and Policy (RP 4103)		3
Internship (RP 4116)		6
Approved Electives (BIOL elect 3000 - 4000 level)[2]		10
	Total	**32**

[1]See appropriate alternatives or substitutions in General Education requirements.
[2]See Departmental Advisor.

The hospitality administration degree program is designed to prepare students for management positions within the hospitality industry such as lodging, resorts, conference and convention centers, restaurants, contract services, theme parks and travel/tourism-related operations.

The course work concentrates on general business, management, finance, marketing, accounting, law, computer science, and specific courses related to hospitality management. The entire curriculum features numerous opportunities for the practical application of problem-solving skills and creativity.

Curriculum in Hospitality Administration

Freshman Year		**Hours**
English Composition I, II (ENGL 1013, 1023)[1]		6
Sciences (BIOL 1014, CHEM 1114)		8
Mathematics[1]		3
Orientation in Parks, Recreation, and Hospitality Administration (HA 1001)		1
Microcomputer Applications (COMS 2003)		3
Introduction to Hospitality Management (HA 1043)		3
Sanitation Safety (HA 1013)		3
Physical Education/Recreation Activity[1]		2
Electives[2]		2
	Total	**31**
Sophomore Year		
Basic Nutrition in Hospitality Administration (HA 2813)		3
Lodging Operations (HA 2043)		3
Principles of Food Preparation (HA 2913)		3
Accounting Principles (ACCT 2003, 2013)		6
Legal Environment of Business (BUAD 2033)		3
Business Statistics (BUAD 2053)		3
Public Speaking (SPH 2003)		3
Social Sciences (ECON 2003 and PSY 2003)		6
Electives[2]		2
	Total	**32**
Junior Year		
Menu Analysis and Purchasing (HA 4043)		3
Hospitality Financial Analysis (HA 3073)		3
Management and Organizational Behavior (MGMT 3003)		3
Dining Service Management (HA 3063)		3
Business Communications (BUAD 3023)		3
Social Sciences[1]		6
Humanities[1]		3
Fine Arts[1]		3
Electives[2]		3
	Total	**30**

Curriculum in Hospitality Administration

Senior Year	
Internship Preparation (HA 4001)	1
Quantity Food Production (HA 4074)	4
Hospitality Marketing and Sales (HA 4013)	3
Legal Aspects of Hospitality Administration (HA 4033)	3
Hospitality Facilities Management and Design (HA 4023)	3
Meetings and Conventions Management (HA 4053)	3
Personnel Management in Parks, Recreation, and Hospitality Administration (HA 4113)	3
Resort Management (HA 4093)	3
Internship (HA 4116)	6
Electives[2]	2
Total	**31**

[1]See General Education requirements.
[2]See Departmental Advisor

Arkansas Center for Energy, Natural Resources, and Environmental Studies

The Center, with the cooperation of various components of Arkansas Tech University, other state agencies and institutions, and professional staff, has the responsibility of planning and conducting competent research, investigations, demonstrations, and experiments of either a basic or applied nature, or both, in relation to energy, natural resources and the environment.

Additional information may be obtained by writing or calling the Arkansas Center for Energy, Natural Resources and Environmental Studies, 1815 Coliseum Drive, Russellville, Arkansas 72801; telephone (501) 968-0201.

Dr. Murray Clark, Director
Energy Center Building
(501) 964-0877
Murray.Clark@mail.atu.edu
Stephen W. Kline, Research Scientist, Mineralist-Petrologist
Tarun Goswami, Research Scientist, Associate Professor of Engineering

Virtual Learning Center

The Virtual Learning Center (VLC) is designed to allow students to participate in higher education at times and places that are conducive to their work and personal schedules. Courses are delivered in various forms, including the Worldwide Web, compressed interactive video, and video tape. Course calendars for the VLC run concurrently with the regular course schedules. Students taking online-web based courses should have computer and Internet access. Students can obtain full credit for the courses they take. In addition, the student may obtain a large portion of his or her degree program through the Virtual Learning Center.

Students may apply for admission and registration through the University's web site or by visiting the Tech campus.

John Gale, Director
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(501) 968-0641
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Museum of Prehistory and History

The mission of this Museum is to provide a center for collections, conservation, interpretation, and research concerned with people and events from prehistoric times to the present. The Museum interprets an eleven county region in Western Arkansas comprising the Arkansas River Valley and adjacent Arkansas Ozarks and Ouachitas, making knowledge about this region available to the community served by Arkansas Tech.

The museum officially opened in April 1992 and accepts visitors between the hours of 9:00 a.m. and 4:00 p.m., Tuesday through Thursday, as well as by special appointment, for evening lectures, and through events. Exhibits interpret area prehistoric archeological collections, Euro/American exploration and settlement, local region and Arkansas Tech University history, and Native American stereotypes.

Each Spring semester, the Museum offers a course entitled Interpretation/ Education through Museum Methods, listed as MUSM (ANTH) 4403(5403).

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Rebecca Batchelor, Museum Store Manager

MILITARY SCIENCE

Reserve Officers' Training Corps
Adjunct Faculty
Wilson Hall, Room 211
(501) 498-6069 (Tech)
(501) 450-3145 (UCA)

Arkansas Tech University students may enroll in military science courses offered by the Department of Military Science at the University of Central Arkansas at Conway under a cross-enrollment agreement. The objective of the department is to provide a basic military education and, in conjunction with the goals of Tech, to develop individual attributes essential to an Army officer. Instruction covers military fundamentals common to all branches of the military service.

Courses are open to all students, and students are responsible for providing their own transportation to and from class sites. No tuition or fees are charged for courses taken in the ROTC program. Requirements for enrollment in military science courses are as follows:

1. Student must be enrolled at Tech and remain at or above the University's probationary level.
2. When contracted by the Department of Military Science, students must have a cumulative grade point average of at least 2.00; ROTC scholarship recipients must maintain a 2.50 GPA or better.

Registration for military science courses is accomplished at the same time and in the same manner as registration for other courses through Tech. Students interested in this program may obtain further information by contacting Captain Anthony Gortemiller at (501) 498-6069.

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Instructor of Secondary Education
Associate Librarian
B.S.E., John Brown University, 1972; M.S., University of North Texas, 1989.

JACK R. HAMM, 1972
Professor of Mathematics
Dean, School of Systems Science
B.S., Arkansas Tech University, 1964; M.S., University of Missouri at Rolla, 1968; Ph.D., University of Missouri at Rolla, 1972.

FRANKLIN D. HARDCASTLE, 1998
Assistant Professor of Chemistry
B.S., Montana State University, 1983; M.S., University of Utah, 1985; Ph.D., Lehigh University, 1990.

WILLIAM E. HARMON, 2000
Professor of Business
William M. Lemley Endowed Chair of Business
B.A., Arkansas Tech University, 1960; M.A., University of Southern California, 1974.

LYMAN B. HARRIS, 1975
Professor of Rehabilitation Science
Head, Department of Behavioral Sciences
Director of Rehabilitation Science
B.A., University of West Florida, 1969; M.S., Florida State University, 1970; Ph.D., Florida State University, 1978.

RUTH M. HARRISON, 1970
Associate Professor of English
B.A., Saint Mary-of-the-Woods College, 1968; M.A., University of Tennessee, 1970.

ALFRED E. HARTMAN, 1981
Instructor of Engineering
B.A., Ouachita Baptist University, 1972.

FAYE E. HAWKS, 1986
Assistant Professor of Speech
B.A., University of Science and Arts of Oklahoma, 1983; M.A., Arkansas State University, 1985.

BARBARA A. HELM, 1993
Assistant Professor of Nursing
B.S.N., Oklahoma Baptist University, 1970; M.S.N., University of Alabama in Birmingham, 1972.

WAYNE A. HELMER, 1998
Associate Professor of Engineering
B.S., University of Dayton, 1966; M.S., University of Arizona, 1968; Ph.D., Purdue University, 1974.

JENNIFER E. HELMS, 1993
Assistant Professor of Nursing
B.S.N., Harding University, 1986; M.S.N., University of Missouri at Kansas City, 1992.

MOSTAFA HEMMATI, 1983
Professor of Physics
Head, Department of Physical Science
B.S., University of Meshad (Iran), 1973; M.S., University of Oklahoma, 1980; Ph.D., University of Oklahoma, 1983.

NITA M. HERRICK, 1976
Associate Professor of Music
B.M.Ed., Central Missouri State University, 1966; M.Ed., University of Missouri, 1969.

THERESA A. HERRICK, 1985
Associate Professor of Recreation and Park Administration
Head, Department of Parks, Recreation,and Hospitality Administration
B.S., Southwest Missouri State University, 1976; M.S., University of Missouri at Columbia, 1981; Ph.D., Clemson University, 1993.

LARRY M. HODGSON, 1987
Associate Professor of Agriculture
B.S., Oklahoma State University, 1968; M.S., University of Arkansas, 1978; Ph.D., University of Arkansas, 1983.

DAVID HOELZEMAN, 2000
Associate Professor of Computer and Information Science
B.S., University of Central Arkansas, 1988; Ph.D., Louisiana State University, 1993.

M. ANNETTE HOLEYFIELD, 1985
Associate Professor of Physical Education
Head, Department of Health and Physical Education
B.S., Arkansas Tech University, 1976; M.Ed., Arkansas Tech University, 1977; Ph.D., University of Arkansas, 1997.

STEPHEN D. HORNOR, 1996
Director of Sports Medicine
Lecturer of Physical Education
B.S., University of Oregon, 1977; M.A., California State University, Chico, 1995.

NANCY D. HORTON, 1999
Instructor of Mathematics
B.S., Arkansas Tech University, 1997; M.S., University of Arkansas at Little Rock, 1999.

SHELIA JACKSON, 1998
Associate Professor of Health and Physical Education
B.S.E., Southern Arkansas University, 1981; M.Ed., University of Arkansas, 1984; Ph.D., Texas Women's University, 1988.

ELLEN J. JENKINS, 1997
Assistant Professor of History
Director of Honors
B.A., University of Texas at Dallas, 1977; M.A., University of North Texas, 1983; Ph.D., University of North Texas, 1992.

GEORGE P. JOHNSON, 1990
Associate Professor of Biology
Curator of Herbarium
B.S., Western Kentucky University, 1978; M.S., Western Kentucky University, 1980; Ph.D., North Carolina State University, 1985.

HANS V. JOHNSON, 1992
Professor of Accounting
B.S.B.A., University of Nebraska, 1963; M.B.A., University of Michigan, 1965; Ph.D., University of Nebraska, 1973; C.P.A., C.M.A., C.I.A.

KELLY JOHNSON, 1999
Assistant Professor of Music
B.M.E., Central Missouri State University, 1993; M.A., Arizona State University, 1995; D.M.A., Arizona State University, 1999.

CYNTHIA J. JONES, 1984
Associate Professor of Nursing
Assistant to Head of Nursing
B.S.N., University of Mississippi School of Nursing, 1971; M.N., University of Mississippi, 1976.

ROYCE D. JONES, 1973
Associate Professor of Accounting
Head, Department of Accounting
B.S., Arkansas Tech University, 1965; M.B.A., East Texas State University, 1971; C.P.A.

SCOTT JORDAN, 1994
Associate Professor of Mathematics
B.S., Southern Arkansas University, 1985; M.S., University of Arkansas, 1988; Ph.D., University of Southwestern Louisiana, 1994.

SUSAN JORDAN, 1994
Instructor of Mathematics
B.S., University of Arkansas, 1987; M.A., University of Arkansas, 1990.

D. MICHAEL KEISLER, 1975
Professor of Mathematics
B.A., University of Texas, 1966; Ph.D., North Texas State University, 1974.

CHRISTOPHER J. KELLNER, 1991
Associate Professor of Wildlife Biology
B.S., University of California at Berkeley, 1978; M.S., Eastern Kentucky University, 1985; Ph.D., University of Arkansas, 1990.

A. CHRISTINE KELLY, 2000
Assistant Librarian
B.A., Point Loma Nazarene University, 1993; M.A., University of San Diego, 1996.

LOYCE A. KENNEDY, 1999
Assistant Professor of Nursing
B.S.N., University of Arkansas for Medical Sciences, 1972; M.S.N., University of Central Arkansas, 1997.

VICKY H. KIEHL, 1967
Associate Professor of Music
B.A., Arkansas Tech University, 1967; M.M., North Texas State University, 1974.

WILL KIMBALL, 1999
Instructor of Music
B.M., Brigham Young University, 1994; M.M., Dusquesne University, 1997.

SCOTT W. KIRKCONNELL, 1981
Professor of Biology
A.B., University of Illinois, 1973; A.M., Indiana University, 1976; Ph.D., Indiana University, 1978.

WILLIAM KIRKPATRICK, 1989
Assistant Professor of Physical Education
B.S., Fort Hays State University, 1983; M.S., Fort Hays State University, 1985; Ed.D., University of Arkansas, 1991.

STEPHEN W. KLINE, 1992
Research Scientist, Mineralogist-Petrologist
Arkansas Center for Energy, Natural Resources and Environmental Studies
B.S., Georgia State University, 1977; M.S., Georgia Institute of Technology, 1981; Ph.D., University of Georgia, 1984.

RICHARD A. KNIGHT, 1999
Assistant Professor of Speech
B.A., Seton Hall University, 1992; M.A., Bloomsburg University, 1993; Ph.D., University of Southern Mississippi, 2000.

JOHN L. KROHN, 1991
Associate Professor of Engineering
Head, Department of Engineering
B.S.M.E., University of Arkansas, 1981; M.S.M.E., University of Arkansas, 1983; Ph.D., Texas A & M University, 1992; P.E.

DAVID W. KRUEGER, 1960
Associate Professor of History
B.S., Memphis State University, 1958; M.A., Memphis State University, 1958.

WILMA J. LABAHN, 1970
Assistant Professor of Secondary Education
Librarian
B.A., Arkansas Tech University, 1967; M.L.S., Louisiana State University, 1969.

PAUL S. LAKE, 1981
Professor of English
B.S., Towson State University, 1975; A.M., Stanford University, 1979.

CHARLES LARSON, 1988
Assistant Professor of Elementary Education
B.S.Ed., Eastern Illinois University, 1956; M.Ed., University of Illinois, 1961; Ed.S., Bowling Green State University, 1966; Ed.D., Memphis State University, 1973.

RENEE LeBEAU-FORD, 1992
Associate Librarian
B.S., Chapman University, 1988; M.L.S., San Jose State University, 1992.

PEGGY LEE, 1992
Associate Professor of Nursing
B.S.N., Mississippi College, 1987; M.S., University of Southern Mississippi, 1990.

MICHAEL A. LINK, 1965
Associate Professor of History
B.S., Henderson State University, 1962; M.S., Henderson State University, 1963; Ph.D., (History), Mississippi State University, 1966; Ph.D., (Philosophy and Religion), Protestant Faculty of Paris, 1976.

STANLEY D. LOMBARDO, 1977
Professor of English
B.A., State University of New York at Buffalo, 1970; Ph.D., Indiana University, 1976.

LAURIE A. LUCAS, 1997
Assistant Professor of Legal Studies
B.B.A., University of Oklahoma, 1985; M.L.I.S., University of Oklahoma, 1993; J.D., University of Oklahoma, 1988.

W. DANIEL MARTIN, 2000
Assistant Professor of Sociology
B.S., University of Central Arkansas, 1989; M.S., University of Central Arkansas, 1992; Ph.D., Oklahoma State University, 1996.

KEVIN H. MASON, 1986
Associate Professor of Marketing
B. S., Arkansas Tech University 1982; M.B.A., University of Arkansas, 1986; Ph.D., University of Arkansas, 1995.

RICK L. MASSENGALE, 1998
Assistant Professor of Computer and Information Science
B.S., Arkansas Tech University, 1993.

GEORGE E. McLELLAN, 1973
Associate Professor of Anthropology
B.A., University of Oklahoma, 1962; M.A., University of Colorado, 1967; Ph.D., University of Colorado, 1969.

CATHY McMAHAN, 2000
Assistant Professor of Recreation and Park Administration
B.S., Recreation Administration, Arkansas Tech University, 1985; M.S., Recreation, Northwestern State University, 1986.

CHRIS M. MERLE, 1998
Instructor of Health Information Management
A.S., Arkansas Tech University, 1986; B.S., Arkansas Tech University, 1993.

DAVID J. MIDDLETON, 1998
Assistant Professor of Computer and Information Science
B.S., University of Sydney, 1979; Ph.D., University of North Carolina at Chapel Hill, 1986.

JEFFREY A. MITCHELL, 1994
Associate Professor of Philosophy
B.A., Whitman College, 1986; M.A., Vanderbilt University, 1990; Ph.D., Vanderbilt University, 1993.

BRENDA G. MONTGOMERY, 1997
Assistant Professor of Hospitality Administration
B.S., Oklahoma State University, 1979; M.S., University of Central Oklahoma, 1992; Ph.D., Oklahoma State University, 1998.

JOHNETTE MOODY, 1997
Instructor of Computer and Information Science
B.S., Arkansas Tech University, 1994; M.Ed., Arkansas Tech University, 1996.

AMI R. MOORE, 2001
Assistant Professor of Sociology
M.A., University du Benin, 1991; M.A., University of Mississippi, 1994; Ph.D., Bowling Green State University, 2000.

JOSEPH L. MOORE, 1988
Professor of Economics
B.S.B.A., University of Arkansas, 1965; M.B.A., University of Arkansas, 1966; Ph.D., University of Arkansas, 1975.

LARRY J. MORELL, 1998
Associate Professor of Computer and Information Science
Head, Department of Computer and Information Science
B.A., Duke University, 1974; M.S., Rutgers University, 1976; Ph.D., University of Maryland, 1983.

GWEN MORGAN, 1984
Professor of Elementary Education
Director of Teacher Education Student Services
B.S., Texas A & I University, 1971; M.Ed., Mississippi State University, 1977; Ed.D., University of Georgia, 1990.

ARDITH A. MORRIS, 1982
Associate Professor of Speech/Theatre
Theatre Director
B.A., University of the Ozarks, 1973; M.A., University of Arkansas, 1975; Ph.D., Northwestern University, 1989.

JAMES L. MOSES, 1999
Assistant Professor of History
B.A., Louisiana State University, 1986; M.A., University of New Hampshire, 1989; Ph.D. Tulane University, 1999.

DAVID MUDRINICH, 1998
Assistant Professor of Art
B.S., Pennsylvania State University, 1976; M.F.A., University of Georgia, 1992.

STEVEN W. MULLINS, 1997
Instructor of Health and Physical Education
Head Coach
B.S., University of Arkansas at Monticello, 1980; M.Ed., University of Central Arkansas, 1982.

TOMMY L. MUMERT, 1989
Assistant Professor of Journalism
Director of News Bureau
B.S., Arkansas State University, 1978; M.A., Arkansas State University, 1986.

RONALD E. NELSON, 1988
Associate Professor of Engineering
B.S., Iowa State University, 1964; M.S., University of Missouri at Rolla, 1966; Ph.D., University of Missouri at Rolla, 1987; P.E.

NOBUYUKI NEZU, 2001
Assistant Professor of Computer and Information Science
B.S., Gakushuin University, 1991; M.S., Oklahoma City University, 1993; Ph.D., Oklahoma State University, 1999.

THOMAS E. NUPP, 1997
Assistant Professor of Wildlife Biology
B.S., The Pennsylvania State University, 1987; M.S., Auburn University, 1992; Ph.D., Purdue University, 1997.

JOHN J. O'REILLY, 2000
Associate Professor of Educational Leadership
B.A., Central Michigan University, 1965; M.A., Central Michigan University, 1976; Ed.D., Arizona State University, 1988.

DAVID M. OSBURN, 2000
Assistant Professor of Psychology
B.A., University of Arizona, 1979; Med., Wichita State University, 1987; M.A., Wichita State University, 1999; Ph.D., Wichita State University, 2000.

MONIQUE PAASSEN, 1999
Assistant Professor of Hospitality Administration
Extended Degree Center Kingston College
B.S., European University, 1993; M.S., European University, 1994.

PHILIP D. PARKER, 1977
Associate Professor of Music
B.M., Wichita State University, 1975; M.M., Indiana University, 1977.

WILLIAM A. PARTON, 1990
Director of Library
B.M., University of Houston, 1973; M.L., University of Washington, 1981.

JACKIE L. PAXTON, 1991
Associate Professor of Elementary Education
B.S.E., University of Central Arkansas, 1978; M.S.E., University of Central Arkansas, 1979; Ed.D., University of Arkansas, 1990.

KATHRYN D. PEARSON, 1984
Assistant Professor of Mathematics
B.S., Arkansas Tech University, 1976; M.Ed., Arkansas Tech University, 1979; Ed.D., NOVA Southeastern University, 2000.

PAULA B. PENDERGRASS, 1992
Professor of Biology
B.S.E., Southwest Missouri State University, 1968; M.A., Southwest Missouri State University, 1970; Ph.D., Washington State University, 1974.

HARVEY L. PHILPOTTS, III, 1993
Associate Professor of English
B.A., University of Virginia, 1977; M.A., University of Virginia, 1979; Ph.D., University of Delaware, 1991.

CARIN PINION, 1999
Instructor of Health and Physical Education
Assistant Coach
B.S., Arkansas Tech University, 1994.

A. KENNETH PIPPIN, 1973
Professor of Agri-Business
Head, Department of Agriculture
B.S.A., University of Arkansas, 1959; M.S., University of Arkansas, 1960; Ph.D., University of Arkansas, 1975.

F. ALLEN POWELL, 2001
Assistant Professor of Hospitality Administration
B.S., University of North Texas, 1992; M.S., Amber University, 1995.

SUSAN POZNAR, 1993
Associate Professor of English
B.A., Brandeis University, 1980; M.A., Duke University, 1982; Ph.D., Duke University, 1989.

BYRA L. RAMSEY, 2000
Assistant Professor of Early Childhood Education
B.S., University of Arkansas, 1966; Ph.D., Mississippi State University, 1999.

RONALD R. REYNOLDS, 1974
Associate Professor of Art
Head, Department of Art
B.S., Oklahoma State University, 1962; M.A., University of Missouri, 1964.

KYLE B. RHONE, 2000
Assistant Professor of Emergency Administration and Management
B.S., Park College, 1994; M.A., Webster University, 1998.

GILL RICHARDS, 2000
Associate Professor of Engineering
B.S., Swarthmore College, 1961; M.S., Stanford University, 1970; Ph.D., University of Southern California, 1984.

GREGG RICONO, 1998
Instructor of Physical Education
Assistant Coach
B.A., Tarkio College, 1986; M.S.Ed., Northwest Missouri State University, 1990.

MICHAEL K. RITCHIE, 1989
Associate Professor of English
B.A., University of Cincinnati, 1969; M.F.A., University of Iowa, 1975; M.S.L.S., University of Kentucky, 1979; Ph.D., Bowling Green State University, 1986.

DAVID W. ROACH, 1983
Professor of Management
Head, Department of Business and Economics
B.A., University of Arkansas, 1982; M.B.A., University of Arkansas, 1983; Ph.D., University of Arkansas, 1991.

CAREY M. ROBERTS, 2000
Assistant Professor of History
B.A., University of Southern Mississippi, 1993; M.A., University of South Carolina, 1995; Ph.D., University of South Carolina, 1999.

JEFF W. ROBERTSON, 1997
Assistant Professor of Physical Science
Director of Astronomical Observatory
B.S., University of Kansas, 1989; M.S., San Diego State University, 1991; Ph.D., Indiana University, 1995.

LARRY A. ROBINSON, 1995
Professor of Education
Vice President for Academic Affairs
B.S., Northeastern Oklahoma State University, 1968; M.A., University of Tulsa, 1971; Ed.D., Oklahoma State University, 1983.

RONALD D. ROBISON, 1988
Associate Professor of Computer and Information Science
B.S., Iowa State University, 1970; M.S., University of Southern California,1975.

SARAH H. ROBISON, 1989
Assistant Professor of Computer and Information Science
B.S., University of Arkansas at Monticello, 1978; M.Ed., Southern Arkansas University, 1982; M.S., Nova Southeastern University, 1994.

KENNETH A. ROGERS, 1989
Professor of Political Science
B.S., University of Oklahoma, 1970; M.A., California State University (Sacramento), 1976; Ph.D., American University, 1982.

MARY ANN ROLLANS, 1980
Associate Professor of Secondary Education
Dean, Community Education and Professional Development
Affirmative Action Officer
B.A., Arkansas Tech University, 1968; M.S.E., University of Central Arkansas, 1974; Ed.D., University of Arkansas, 1986.

EARL F. SCHROCK, Jr., 1971
Professor of English
B.A., Arkansas Tech University, 1966; M.A., University of Arkansas, 1968; Ph.D., University of Arkansas, 1980.

C. GLENN SHEETS, 1990
Professor of Elementary Education
Registrar
B.S.E., Henderson State University, 1971; M.S.E., Henderson State University, 1975; Ed.D., University of Arkansas, 1978.

DONNA S. SHERRILL, 1992
Instructor of Mathematics
B.S., Arkansas Tech University, 1990; M.Ed., Arkansas Tech University, 1992.

REBECCA A. SHOPFNER, 2000
Assistant Professor of Curriculum and Instruction
B.S.E., University of Central Arkansas, 1973; M.Ed., Arkansas Tech University, 1986; Ed.D., University of Arkansas, 1999.

KENNETH W. SHORES, 1985
Associate Professor of Mathematics
B.S., Arkansas Tech University, 1970; M.S., University of Arkansas, 1972.

STEPHEN A. SHRY, 1975
Professor of Psychology
B.S., Michigan State University, 1963; M.A., Southern Illinois University, 1965; Ph.D., Oklahoma State University, 1968.

CHERYL S. SMITH, 1992
Associate Professor of Nursing
B.S.N., University of Southern Alabama, 1983; M.S., University of Southern Mississippi, 1990.

RICHARD S. SMITH, 1991
Associate Professor of Economics
B.B.A., University of Iowa, 1965; M.A., University of Iowa, 1970; Ph.D., University of Texas, 1974.

TIMOTHY E. SMITH, 1998
Assistant Professor of Music
B.M., St. Olaf College, 1989; M.M., Indiana University, 1991; Ph.D., Indiana University, 1998.

DARLA D. SPARACINO, 1993
Assistant Professor of Health Information Management
B.S., Arkansas Tech University, 1989; M.Ed., Arkansas Tech University, 1995.

SAMMIE P. STEPHENSON, 1999
Assistant Professor of Elementary Education
B.A., Henderson State University, 1963; M.S.E., University of Central Arkansas, 1969; Ed.D., University of Arkansas, 1995.

LESLIE C. STEWART-ABERNATHY, 1989
Associate Professor of Anthropology
Arkansas Archeological Survey
B.A., Arkansas State University, 1970; M.A., Brown University, 1974; Ph.D., Brown University, 1981.

JOSEPH N. STOECKEL, 1992
Associate Professor of Fisheries Biology
Director, Fisheries and Wildlife Biology Program
B.A., Southern Illinois University at Carbondale, 1978; M.A., Southern Illinois University at Carbondale, 1985; Ph.D., Virginia Polytechnic Institute and State University, 1993.

JOHN M. SULLIVAN, 1987
Associate Professor of Art
B.S., Northwestern State University (Louisiana), 1975; M.F.A., Louisiana Tech University, 1987.

GEORGE TAYLOR, 1998
Assistant Professor of Health and Physical Education
B.S.E., Henderson State University, 1975; M.S.E., Henderson State University, 1976; Ed.D., Texas A & M University, 1990.

ROBERT L. THOMPSON, 1999
Instructor of Health and Physical Education
Head Coach
B.S., Belhaven College, 1992; M.S., Jackson State University, 1997.

PEGGY A. TIBBS, 1992
Instructor of Mathematics
B.S., University of Texas at Austin, 1958; M.Ed., Stephen F. Austin State University, 1979.

WILLIAM C. TITUS, 1984
Associate Professor of Psychology
B.A., Northern Michigan University, 1976; M.A., Miami University (Ohio), 1980; Ph.D., Miami University (Ohio), 1982.

KENNETH W. TRANTHAM, 1998
Assistant Professor of Physical Science
B.S., Arkansas Tech University, 1991; M.S., University of Missouri, 1993; Ph.D., University of Nebraska, 1996.

THOMAS P. TYLER, 1967
Professor of Economics
Dean, School of Business
B.A., Hendrix College, 1965; M.B.A., University of Arkansas, 1967; Ph.D., University of Arkansas, 1980.

S. VIRGINIA TYSON, 1982
Instructor of English and Developmental Reading
B.A., Arkansas Tech University, 1957; M.A., University of Arkansas, 1963.

VAN A. TYSON, 1973
Professor of Journalism
B.A., Arkansas Tech University, 1959; M.A., University of Arkansas, 1963; Ph.D., University of Arkansas, 1981.

DONNA R. VOCATE, 1998
Associate Professor of Speech
Head, Department of Speech/Theatre/Journalism
B.A., University of Colorado-Boulder, 1962; M.A., University of Denver, 1977; Ph.D., University of Denver, 1980.

DANA D. WARD, 1988
Associate Professor of Spanish
B.A., Hendrix College, 1974; M.A., University of Arkansas, 1977; Ph.D., University of Arkansas, 1987.

DAVID W. WARD, 1999
Assistant Professor of Psychology
B.S., University of Texas, 1986; M.S., University of Georgia, 1990; Ph.D., University of Georgia, 1998.

JOHN W. WATSON, 1978
Professor of Mathematics
Head, Department of Mathematics
B.A., University of Arkansas, 1971; M.S., University of Arkansas, 1973; Ed.D., Oklahoma State University, 1978.

T. RAY WHEELER, 1994
Assistant Professor of Music
Director of Choral Activities
B.M.E., University of Oklahoma, 1981; M.M., University of Oklahoma, 1987.

MARGARET G. WILKERSON, 1976
Assistant Professor of Rehabilitation Science
B.A., Arkansas Tech University, 1970; M.R.C., Arkansas State University, 1971.

MELINDA A. WILKINS, 1988
Associate Professor of Health Information Management
Director of Health Information Management
B.S., Southwestern Oklahoma State University, 1983; M.Ed., Southwestern Oklahoma State University, 1988.

JAMES T. WILLCUTT, 1967
Associate Professor of Physics
B.S., Arkansas Tech University, 1965; M.S., University of Missouri at Rolla, 1967.

CLARISSA A. WILLIS, 1998
Assistant Professor of Early Childhood Education
B.A., University of Arkansas, 1977; M.A., University of Arkansas, 1979; Ph.D., University of Southern Mississippi, 1993.

PENNY P. WILLMERING, 1999
Assistant Professor of Rehabilitation Science
B.S.Ed., University of Missouri-Columbia, 1979; M.A., Southern Illinois University, 1986; Ph.D., University of Madison-Wisconsin, 1999.

DEBORAH WILSON, 1992
Associate Professor of English
B.A., Louisiana Tech University, 1974; M.Ed., Mississippi College, 1982; Ph.D., Louisiana State University, 1991.

SID T. WOMACK, 1986
Associate Professor of Secondary Education
B.M.E., Abilene Christian College, 1972; M.Ed., Sam Houston State University, 1974; Ph.D., Texas A & M University, 1979.

JEFFREY R. WOODS, 2000
Assistant Professor of History
B.A., University of Kansas, 1992; M.A., University of Arkansas, 1994; Ph.D., Ohio University, 2000.

SAM M. WORLEY, 1997
Assistant Professor of English
B.A., The University of Texas at Austin, 1981; M.A., The University of North Carolina at Chapel Hill, 1986; Ph.D., The University of North Carolina at Chapel Hill, 1991.

DONNA L. WRIGHT, 2000
Assistant Professor of Computer and Information Science
B.S., Arkansas Tech University, 2000.

TSUNEMI YAMASHITA, 1998
Assistant Professor of Biology
B.A., Hendrix College, 1985; Ph.D., Vanderbilt University, 1993.

ANNETTE ZAKHARIAN, 1984
Professor of French
A.B., Rutgers University, 1974; M.A., Syracuse University, 1980; D.A., Syracuse University, 1983.

ROCIO ZALBA, 2000
Instructor of Spanish
B.A., University of Guelph, 1999; M.A., University of Toronto, 2000.

CONNIE W. ZIMMER, 1990
Assistant Professor of Secondary Education
A.B., Western Kentucky University, 1972; M.S.L.S., Western Kentucky University, 1975.

Faculty Emeriti

FIRMAN W. BYNUM, 1948
Dean of Students Emeritus
B.S.E., University of Arkansas, 1944; M.S., University of Arkansas, 1950.

E. SUE DOSS, 1956
Professor Emeritus of English
B.A., University of the Ozarks, 1945; M.A., University of Arkansas, 1950; Ph.D., University of Arkansas, 1958.

WILLIAM M. LEMLEY, 1964
Associate Professor Emeritus of Accounting
B.S., Hendrix College, 1949; M.B.A., University of Arkansas, 1957.

RICHARD J. MORRISEY, 1968
Professor Emeritus of History
B.A., San Francisco State College, 1940; M.A., University of California, Berkeley, 1941; Ph.D., University of California, Berkeley, 1949.

AUDREY R. OWENS, 1984
Professor Emeritus of Nursing
B.S., Youngstown State University, 1971; M.S., Youngstown State University, 1978; M.S., Texas Woman's University, 1979; Ed.D., The University of Akron, 1983.

JOHN H. WAINRIGHT, 1952
Dean Emeritus of Education
B.S., Southwest Missouri State, 1940; M.A., George Peabody College, 1948; Ed.D., George Peabody College, 1954.

KENNETH R. WALKER, 1958
Professor Emeritus of History
B.A., Goshen College, 1949; M.A., Indiana University, 1950; M.Ed., University of Arkansas, 1964; Ph.D., Indiana University, 1952

TOM B. WILSON, 1963
Professor Emeritus of Philosophy
B.A., University of the Ozarks, 1942; B.D., Princeton Theological Seminary, 1949; M.A., University of Arkansas, 1955; Ph.D., University of Arkansas, 1964.

CHIA CHI YANG, 1980
Professor Emeritus of Chemistry
B.S., National Chen Kung University, Taiwan, 1949; M.S., Georgia Tech, 1968; Ph.D., Georgia Tech, 1979.

COURSE DESCRIPTIONS

In this section of the catalog, all courses taught at Arkansas Tech University are listed alphabetically by subject area. Courses fulfilling subject matter requirements in more than one area are cross-listed; e.g., the listing POLS (HIST) 4043 is offered for three semester hours of credit in either political science or history. For departmental write-ups and detailed curricula of programs of study, see the appropriate division of the preceding section.

Course numbers are to be interpreted as follows:

The first digit refers to the level of the course: 1-freshman, 2-sophomore, 3-junior, 4-senior; 0-designates a course that cannot be used to satisfy general education requirements nor provide credit toward any degree.

The middle two digits merely differentiate the course from others and have no meaning for the student.

Finally, the last digit refers to the number of "hours of credit" allowed for the course. Typically an "hour of credit" requires one hour of classroom work per week for the duration of a semester.

Accounting

ACCT 2003 Accounting Principles I
Each semester. Fundamental process of accounting, books of original entry, preparation of working papers, adjusting entries, and financial statements for sole proprietorships. Accounting majors may not repeat this course to raise grade point in their major field after completing ACCT 3013.

ACCT 2013 Accounting Principles II
Each semester. Prerequisite: ACCT 2003. Accounting processes applied to corporations and partnerships. Manufacturing cost, income tax, managerial reports, cash flow, and statement analysis. Accounting majors may not repeat this course to raise grade point in their major field after completing ACCT 3013.

ACCT 3003 Intermediate Accounting I
Prerequisites: ACCT 2013; junior standing in School of Business. A comprehensive study of accounting theory governing preparation of financial statements with emphasis on conceptual framework, development of accounting standards, and the recording and reporting process. Cash, receivables, inventories, property, plant and equipment, intangible assets, and other selected topics.

ACCT 3013 Intermediate Accounting II
Prerequisite: ACCT 3003. Continuation of ACCT 3003. Topics covered include current and long-term liabilities, contingencies, stockholders' equity, earnings per share, temporary and long-term investments, revenue recognition, accounting changes, cash flows, statement analysis, and disclosure in financial reporting.

ACCT 3043 Federal Taxes I
Prerequisite: ACCT 2013. A study of federal income tax laws and their relationship to other forms of taxation with primary emphasis on the determination of federal income tax liability and tax planning for individuals.

ACCT 3053 Federal Taxes II
Prerequisite: ACCT 3043. A study of federal income tax laws with primary emphasis on the determination of federal income tax liability and tax planning for entities other than individuals.

ACCT 3063 Managerial Accounting
Prerequisite: ACCT 2013. A study of accounting principles, concepts and procedures as an aid to management for internal use in planning, controlling and decision making. Financial statements, cost accounting, cost behavior, budgets, capital expenditures, pricing decisions, and other selected topics will be covered.

ACCT 4003 Advanced Accounting I
Prerequisite: ACCT 3013. A comprehensive study of complex accounting problems involving financial statement treatment of income taxes, pensions, and leases. Problems underlying accounting for partnerships, corporate liquidations and reorganization, and estates and trusts are examined.

ACCT 4013 Advanced Accounting II
Prerequisite: ACCT 3013. A comprehensive study of complex problems involving mergers and acquisitions, consolidated financial statements, segment and interim reporting, multinational accounting, SEC, and accounting theory.

ACCT 4023 Cost Accounting
Spring. Basic principles of cost accounting, departmentalization, budgets, standard cost, variance analysis. job-order and process costs.

ACCT 4033 Auditing
Fall. Prerequisite: ACCT 3013. Auditing procedures and concepts, audit working papers and reports, evaluation of internal controls, legal and ethical environment.

ACCT 4053 CPA Review
Spring. Prerequisites: Twenty-one semester credit hours of accounting. A review of problems relating to preparation for the C.P.A. examination. Emphasis on all four examination parts: practice auditing, law, and theory with concentration in theory and practice

ACCT 4071-3 Seminar in Accounting
Prerequisite: Permission of the Department. Accounting topics of current interest will be covered. Coverage will include international accounting practices, S.E.C., and accounting ethics. Cases and small group activities will be utilized. Participants will prepare and present written and oral reports on topics under study. Credit for one to three hours may be earned depending upon the material covered.

ACCT 4083-6 Internship in Accounting
Prerequisite: Permission of the Accounting Department Head and senior standing. A structured assignment which allows a senior accounting major to gain "real world" professional experience in an accounting position relating to an area of career interest. The student works full-time one semester in the office of a cooperating firm under the supervision of a member of management of that firm. An accounting faculty member will observe and consult with the student and the cooperating firm's management periodically during the period of internship. A term paper prepared by the student will be required.

ACCT 4093 Governmental Accounting
Prerequisite: ACCT 2013. Study of GAAP underlying accounting for governmental/ nonprofit entities. Governmental, Proprietary, and Fiduciary funds along with Fixed Asset and Long-term Liability Account Groups are covered.

Agricultural Animal Science

AGAS 1001 Principles of Animal Science Laboratory
Study of management and the facilities used in the production of beef cattle, swine, sheep, and horses. Laboratory mandatory for all animal science majors. Optional for others. Laboratory two hours.

AGAS 1013 Principles of Animal Science
A study of the American livestock industry and the scientific principles underlying the management and production of livestock and poultry. Lecture three hours.

AGAS 2083 Feeds and Feeding
Prerequisites: AGAS 1013, CHEM 1114, or consent of instructor. Principles of animal nutrition, characteristics of feed ingredients, feeding strategies, and formulation of rations for farm animals. Lecture three hours.

AGAS 3003 Reproduction in Farm Animals
Prerequisite: AGAS 1013 or consent of instructor. Anatomy and physiology of the reproductive system of farm animals; to include a study of the causes of reproductive failure, management to improve reproductive efficiency, and practical training in pregnancy testing and artificial insemination of cattle. Lecture three hours.

AGAS 3013 Beef Cattle Management
Prerequisite: AGAS 1013 or consent. A study of practices in management of beef cattle including breeding, feeding, care and marketing, with emphasis on production in the South. Lecture three hours.

AGAS 3103 Swine Management
Prerequisite: AGAS 1013 or consent of instructor. A study of current practices during the farrowing, growing, and finishing phases of swine production. Topics covered include housing, feeding, scheduling, reproduction, disease control, and waste disposal. Lecture three hours.

AGAS 3113 Light Horse Production
Prerequisite: AGAS 1013 or consent of instructor. A study of breeding, feeding, management, and disease-control practices in light horse production. Lecture three hours.

AGAS 3303 Poultry Management
Prerequisite: Junior standing or consent of instructor. A study of the management practices involved in the various phases of the production of eggs, broilers, turkeys, and breeders. Lecture three hours.

AGAS 3323 Poultry Nutrition
Prerequisite: Junior standing or consent of instructor. An introductory course in poultry nutrition. A study of the essential nutrients for poultry, available sources of these nutrients and formulation of diets that supply the nutrients in their appropriate amounts. Lecture three hours.

AGAS 3333 Poultry Processing and Product Technology
Prerequisite: Junior standing or consent of instructor. A study in depth of the overall industry practices and problems covering the processing, handling, marketing, and preparation of poultry meat and by-products. Lecture three hours.

AGAS 4203 Animal Nutrition
Prerequisites: CHEM 1114 and AGAS 2083 or consent of instructor. Digestion, absorption of nutrients, and metabolism of farm animals. Includes a study of the requirements for maintenance, growth, activity, and reproduction of ruminants and non-ruminants. Lecture three hours.

AGAS 4303 Poultry Diseases
Prerequisite: Junior standing or consent of instructor. The etiology, basic pathology, and combatants of bacterial, viral, protozoan, and mycotic diseases of poultry. Lecture three hours.

Agricultural Business and Economics

AGBU 2063 Introduction to Agriculture Economics
Fall. Introduction to agriculture economic concepts and principles and their relationship to macrovariables in the free enterprise systems that affect agriculture. Lecture three hours.

AGBU 2073 Principles of Agriculture Economics
Spring. An application of agriculture concepts and principles to agricultural firms in the economy with emphasis on production and costs function. Lecture three hours.

AGBU 3143 Agriculture Economics
Prerequisite: AGBU 2063 and 2073 or consent of instructor. A study of micro-economic theory and its application to the agriculture industry. Lecture three hours.

AGBU 4003 Agri-Business Management
Prerequisite: Junior standing, or consent of the instructor. A study of the managerial practices and procedures that apply to all agriculture businesses. Emphasis is placed on the use and application of management and economic principles in decision making directed toward profit maximization. Lecture three hours.

AGBU 4013 Agricultural Marketing
Prerequisite: AGBU 2063 and 2073, or consent of instructor. A study of marketing functions, practice, organizational structure, legal aspects of agricultural marketing in relation to marketing policies, analysis of consumer behavior, and market demand. Lecture three hours.

AGBU 4023 Agricultural Finance
Prerequisite: AGBU 2063 and 2073 or consent of instructor. Designed as an economic study of the acquisition and use of capital in agriculture. Analytical procedures are used to determine how to allocate capital among alternative uses and to determine the amount of capital that can safely be used. Lending institutions are analyzed as to their purpose and efficiency in serving the agricultural sector of the economy. Lecture three hours.

AGBU 4033 Agricultural Policy
Prerequisite: AGBU 2063 and 2073 or consent of instructor. Designed as an introduction to historical and current federal governmental legislation in agriculture. Specific emphasis is placed on the logic, beliefs, attitudes and values of the American people coincident with the social, economic, and political environment, and on evaluating the objectives, means and the observed results through the criteria of resource allocation and income distribution in the agricultural sector of the economy. Lecture three hours.

AGBU 4043 Appraisal of Farm Real Estate
Prerequisite: AGBU 2063 and 2073, or consent of instructor. A practical application of principles and practices in farm real estate evaluation, emphasizing the processes of value development and uses. Lecture three hours.

AGBU 4991-4 Special Problems In Agriculture
Prerequisite: Permission of the department. One to four hours credit, depending on the nature and extent of the problem. This is a course designed to introduce qualified students to specific agricultural areas including Agri Business internships and veterinary clinic experience. Laboratory and periods arranged.

Agricultural Engineering/ Mechanization

AGEG 3203 Soil, Water and Forest Conservation
Prerequisite: Junior standing or consent of instructor. Causes and control of soil and water losses; methods of erosion control; relationship of soil and water conservation to forest, recreation, pollution and wildlife management. Lecture three hours.

AGEG 3213 Watershed Management
Prerequisite: Junior standing or consent of instructor. An introductory course in the problems of water supplies from surface sources and underground aquifers. Practices to develop supplies, to protect sources, and maintain water quality will be emphasized. Lecture three hours.

AGEG 3413 Agricultural Waste Management
Prerequisites: MATH1103 or 1113, CHEM 1114, and AGSS 2013. A study of potential adverse environmental quality problems associated with agricultural operations, current trends and innovative solutions to waste management problems, and current legal constraints and regulating agencies. Lecture three hours.

Agricultural Plant Science

AGPS 1003 Field Crops
Nature, importance, ecology, management growth characteristics, fundamental principles of production. Lecture three hours.

AGPS 1023 General Horticulture
Principles and practices in propagation of plants, sexual and asexual reproduction methods; construction and management of greenhouses. Lecture three hours.

AGPS 1033 Introduction to Forestry
General survey of the five fields of forestry; a preview of forestry subjects; forestry resources; some emphasis on silviculture, measurement, protection, utilization, preservation and forest administration. Lecture three hours.

AGPS 3023 Forage Crops and Pasture Management
Prerequisites: Junior standing or consent of instructor. Selection, culture, production, distribution and uses of pasture and forage plants; management problems in hay and silage; emphasis on utilization and improvement of pasture. Lecture three hours.

AGPS 3043 Plant Propagation
Prerequisite; Junior standing or consent of instructor. A study of the principles and practices in the propagation of herbaceous and woody indoor plants and flowers. Lecture three hours.

AGPS 3053 Weeds and Weed Control
Prerequisite: Junior standing or consent of instructor. Identification, growth habits. and methods of control for weeds. Lecture three hours.

AGPS 3063 Vegetable Growing
Prerequisite: Junior standing or consent of instructor. The application of scientific facts and principles that are involved in the successful production of vegetables under cover and/or in the open. Lecture three hours.

AGPS 3073 Floriculture
Prerequisite: Junior standing or consent of instructor. Commercial production and marketing of major cut flower crops, bedding plants, and flowering pot plants under cover and/or in the open. Lecture three hours.

AGPS 3083 Small Fruit and Nut Culture
Prerequisite: Junior standing or consent of instructor. A study of the factors underlying the commercial and home production of small fruits and nuts, including a study of varieties, propagation, pruning, spraying, harvesting, and marketing. Lecture three hours.

AGPS 3093 Greenhouse Operation and Management
Prerequisite: Junior standing or consent of instructor. Greenhouse construction and management of heating, cooling, moisture, fertilization, lighting, insect and disease control in the growth of major greenhouse crops. Lecture three hours.

AGPS 3244 Plant Pathology
Prerequisite: BIOL 1134 or BIOL 1014. Introductory course in plant diseases. A study of the causes, symptoms, spread and control of plant diseases. The emphasis is placed on the interaction between disease-causing agents and the diseased plant and the way in which environmental conditions influence the mechanisms by which factors produce plant disease. Lecture three hours, laboratory two hours.

AGPS 4103 Crop and Garden Insects
Prerequisite: Junior standing or consent of instructor. Anatomy, physiology, ecology, life history, and control of insects affecting crops and garden plants. Lecture three hours.

Agricultural Soil Science

AGSS 2013 Soils
Prerequisite: CHEM 1114. Origin, classification, physical and chemical properties of soils. A review of the major areas of soil science and their application to agricultural production. Lecture three hours.

AGSS 3033 Soil Fertility
Prerequisite: AGSS 2013. Physical, chemical, and biological properties that relate to soil fertility as measured by plant production and quality. Growth response to fertilizers and fertilization methods. Lecture three hours.

Allied Health Science

AHS 1024 Basic Pharmacology with an Overview of Microbiology
Fall and Spring. Enrollment is limited to medical assistant and health information management majors. Topics to be covered in addition to introductory pharmacology will include basic chemistry as it applies to the medical laboratory and a brief overview of microbiology and immunology. Basic pharmacology as it relates to the drug interaction with each of the body systems and classifications of drugs will be covered. Students will utilize the Physicians' Desk Reference (PDR) in the course. Lecture three hours, laboratory two hours. $10 laboratory fee.

AHS 2013 Medical Terminology
A study of the language of medicine including word construction, definition, and use of terms related to all areas of medical science, hospital service, and the allied health specialties. Duplicate credit for AHS 2013 and 3013 will not be allowed.

AHS(BIOL) 2022 Medical Laboratory Orientation and Instrumentation, Laboratory
Fall. Enrollment is limited to students that are enrolled in AHS 2023. Topics covered will include laboratory orientation, laboratory procedures/techniques, introduction to clinical instrumentation (both manual and automated), quality control principles, and care of equipment. $10 laboratory fee.

AHS(BIOL) 2023 Medical Laboratory Orientation and Instrumentation
Fall. Enrollment is limited to medical assistant and/or medical technology majors who have completed at least BIOL 1114 or 1124 with a grade of “C” or better (AHS 2013 recommended), and are in the final year of their program at Tech. This course is concerned with both the theoretical and practical application of a wide range of clinical duties performed by the medical assistant. Topics covered will include hematology, urinalysis, hematostatic processes, body chemistry, microbiology, blood typing, and electrocardiography. Lecture three hours.

AHS 2031 Medical Assistant Clinical Practice Laboratory
Spring. Enrollment is limited to medical assistant majors who are enrolled in AHS 2034. Students will be assigned to field laboratory settings in area clinics on a weekly basis. While at the medical facility they will apply the theories and concepts which are covered in AHS 2023 and AHS 2034. Three-hour laboratory weekly. $10 laboratory fee.

AHS 2034 Medical Assistant Clinical Practice
Spring. Enrollment is limited to medical assistant majors. Prerequisite: AHS 2023 and 2022. Topics covered will include examination room techniques, sterilization procedures, operation and care of electrocardiograph, assisting with minor surgery, physiotherapy, pharmacology, medications and specialist assisting. Students must subscribe to malpractice liability insurance. Lecture four hours.

AHS 2044 Medical Assistant Administrative Practice
Fall. Prerequisite: AHS 2013. This course is open only to medical assistant majors in the final part of the program or by permission of the medical assistant program director. A survey course emphasizing the business administrative duties of the medical assistant. Course content will include working with patients, medical records, medical dictation, office procedures, and office management. Student must subscribe to malpractice liability insurance. Lecture three hours, laboratory two hours. $10 laboratory fee.

AHS 2053 Computers in the Medical Office with an Overview of Insurance Procedures
Spring. Prerequisites: HIM 2003, AHS 2044. This course is open only to medical assistant majors in the final part of the program or by permission of the medical assistant program director. This course will prepare the medical assistant to work as an administrative medical assistant in a health care facility. Students are introduced to the computerization of the medical office using current operating systems. Topics covered will include recording information on patients, scheduling appointments, printing reports, producing patient statements and claim forms, and filing electronic claims. Lecture 3 hours.

AHS 2055 Externship
First summer term. Prerequisites: Completion of all other required courses in medical assistant curriculum. The course is scheduled at the end of the program. It shall include the opportunity to perform various clinical and administrative procedures under supervision. The student will remain in a medical facility for a period of four weeks. Assignments may be made anywhere in Arkansas; students must assume the full financial responsibility for this assignment. A seminar will be scheduled for the fifth week. Student must subscribe to malpractice liability insurance.

AHS 2061 Medical Assistant Seminar
First summer term. Prerequisite: AHS 2055. A one-week seminar scheduled for the week following the externship. Topics discussed will be based on those arising from the student's experiences while on his/her externship. Employment procedures will also be covered.

American Studies

AMST 2003 American Studies
Prerequisite: ENGL 1013 or equivalent. An exploration of American culture through study of significant ideas, social issues and literary texts. AMST 2003 may be used to fulfill 3 hours of the Social Sciences general education requirements.

Anthropology

ANTH 1213 Introduction to Anthropology
An introduction to the sub-disciplines of cultural anthropology, physical anthropology, archeology, and linguistics.

ANTH 2003 Cultural Anthropology
A study of contemporary and historical peoples and cultures of major world culture areas. May not be taken for credit after completion of ANTH 3213.

ANTH 3203 Indians of North America
A study of contemporary and historical peoples and cultures of North America.

ANTH 3223 North American Archeology
The study of prehistoric peoples and cultures of North America.

ANTH 3233 MesoAmerican Archeology
The study of prehistoric peoples and cultures of central and southern Mexico and western Central America.

ANTH 3241-4 Seminar in Anthropology
Prerequisite: Permission of instructor. A directed seminar in an area of anthropology. The specific focus will depend upon research interests, student interest, and current developments in the field of anthropology.

ANTH 4206 Workshop in Anthropology
Five-week summer session. Prerequisite: Permission of instructor and department head. An intensive five-week experience in anthropology combining classroom study and field exposure to techniques, artifacts, and findings pertinent to anthropology/ archeology of North America. Extensive travel to sites and collections will be an integral part of the study experience. It may be necessary to assess a special fee which would be stated in advance.

ANTH(MUSM) 4403 Interpretation/Education through Museum Methods
Prerequisites: Senior or Graduate standing, or permission of instructor. Museum perspectives and approaches to care and interpretation of cultural resources, including interpretive techniques of exhibit and education-outreach materials, and integrating museum interpretation/education into public school and general public programming. Class projects focus on special problems for managing interpretive materials in a museum setting. Graduate level projects or papers involve carrying out research relevant to the Museum's mission and relating to current Museum goals.

ANTH 4991-4 Special Problems in Anthropology
Prerequisite: Permission of instructor. Independent work under individual guidance of staff member.

Art

ART(JOUR) 1163 Basic Photography
A study of the use of the camera, films, equipment, and the basics of black and white processing and printing. Includes introductions to lighting techniques, composition, and color photography.

ART 1203 Introduction to Graphic Design
An introduction to fundamental graphic design principles, techniques and materials, including the design and reproduction of letterforms. Studio six hours.

ART 1303 Introduction to Drawing
An introduction to structural and expressive responses in drawing by the study of line, volume, shape, light perspective, the media, and their interrelations. Studio six hours.

ART 1403 Two-Dimensional Design
Basic study of elements and principles of two-dimensional design employing a variety of tools and materials. Studio six hours.

ART 2103 Art History I, World
An examination of the periods and cultures responsible for major artistic monuments and achievements from pre-history through the Gothic period.

ART 2113 Art History II, World
A survey of the events, people, and stylistic trends involved in the development of major art forms from the era of the Italian Renaissance to the present.

ART 2123 Experiencing Art
This course is designed to provide a background in art and the related processes so that a student may develop powers of observation and thereby respond to a work of art.

ART 2203 Applied Graphic Design
Prerequisite: ART 1203. Application of fundamental graphic design principles, techniques, and materials to practical exercises. Studio six hours.

ART 2303 Figure Drawing
Prerequisite: ART 1303. Introduction to the study of the human figure. A major emphasis will be directed to exercises in the study of anatomy, proportion, and line as it relates to the figure. Studio six hours.

ART 2403 Color Design
Basic application of color principles and color theory. Studio six hours.

ART 2413 Three-Dimensional Design
Prerequisite: ART 1403. Basic study of three-dimensional problems of structure, spatial organization, and introductory sculptural concerns. Studio six hours.

ART 2503 Introduction to Opaque Painting
Prerequisites: ART 1303, 1403, 2403. The exploration of opaque painting techniques. Traditional oil, acrylic, and alkyd will be studied. Studio six hours.

ART 2703 Introduction to Sculpture
Prerequisites: ART 1303, 1403, 2413. Basic techniques of sculpture and sculptural composition. Modeling, casting, carving, and constructive processes are introduced. Studio six hours.

ART 3003 Art Education I, K-12
Participation in a wide variety of art experiences and basic skills. Laboratory six hours.

ART 3013 Art Education II, K-12
Participation in a wide variety of art experiences for the student preparing to teach upper grades. Assignments are developed using several media in a number of arts disciplines such as drawing, painting, design, sculpture, printmaking, art history, and crafts. Concentration on vocabulary, equipment, objectives, and appreciation of artists.

ART 3113 Art History, American
A study of art forms in architecture, painting, sculpture and craft from Colonial times to the present.

ART 3123 Art History, Renaissance
A concentrated study of art forms in architecture, painting, sculpture and crafts during the period of the Italian and Northern Renaissance.

ART 3213 Basic Advertising Art
Studio problems in the design and layout of publication advertising. Studio six hours.

ART 3223 Three-Dimensional Advertising
Prerequisite: ART 1203, 2413. Studio problems in the design and presentation of 3-D advertising packaging and displays. Studio six hours.

ART 3233 Production Techniques
Prerequisite: ART 1203. Introductory course on methods for producing production art (mechanicals), as well as storyboards and other diagrams. Studio six hours.

ART 3303 Drawing Studio I
Prerequisites: ART 1303, 2303. The application of the theories and techniques of drawing as they relate to the study of composition will be covered, as well as the development of the concepts of economy and performance as applied to the finished drawing. Studio six hours.

ART 3503 Painting Studio I
Prerequisite: ART 2503. A continued study in the opaque or transparent painting techniques. Emphasis will be directed toward the economy of conception and performance in the completion of finished works of art. Studio six hours.

ART 3533 Watercolor Painting
Prerequisite: ART 1303, 1403, 2403. The exploration of transparent, gouache, and egg tempera water painting techniques. Studio six hours.

ART 3603 Ceramics
An introduction to ceramics, emphasizing the imaginative design and production of ceramic objects utilizing hand built techniques. Exposure to the complete ceramic process through the use of demonstrations, slides, and lectures. Students are expected to purchase materials as required. Studio six hours.

ART 3613 Ceramics Wheelthrowing
The emphasis of this class will be on technical experience and creating vessel oriented functional forms from the wheel. Studio six hours.

ART 3703, 3713 Sculpture Studio I, II
Prerequisite: ART 2703. A continued study of sculptural techniques introduced in Introduction to Sculpture, allowing for student expansion and specialization on individual conceptions. Studio six hours.

ART 3803 Introduction to Printmaking
Prerequisites: ART 1303, 1403, 2403. A survey of printmaking techniques and a history of each. Relief, intaglio, serigraphy, and lithography will be explored. Studio six hours.

ART 3813 Printmaking Studio I
Prerequisite: ART 3803. Printmaking activities introduced in Introduction to Printmaking will be used as a basis for the student to expand and specialize. Students will be expected to develop an individual print series in one or more print techniques. Studio six hours.

ART 4103 Art History, Modern
The study of art and architecture from neo-classicism to the present with emphasis on the art styles after Impressionism.

ART(JOUR) 4163 Advanced Photography
Prerequisite: ART (JOUR) 1163 or JOUR 3163 or consent of instructor. An introduction to advanced photographic techniques, including the Ansel Adams Zone System of negative exposure, development, and printing. Color-film processing and printing, studio photography, and special effects are also covered.

ART 4213 Advanced Advertising Art
Prerequisite: ART 3213. Continuation of ART 3213 with advanced problems in advertising campaigns. Studio six hours.

ART 4233 Techniques for Illustration
Prerequisites: ART 1403, 2303, 3213. Application of fine art drawing and painting techniques to illustration problems. Studio six hours.

ART 4313, 4323 Drawing Studio II, III
Prerequisite: ART 3303. The further development of advanced drawing concepts and skills. This course will deal with each student on a one-to-one basis. The student will present a "contract of drawing projects" subject to instructor's approval. Studio six hours.

ART 4503, 4513 Painting Studio II, III
Prerequisite: ART 3503. Advanced study of the opaque/transparent painting techniques. Emphasis will be theme oriented. Each student must submit to the instructor a "painting contract" which must be approved. Studio six hours.

ART 4603, 4613 Ceramics Studio I, II
Prerequisites: ART 3603, 3613. A study of advanced techniques and skills. This course will deal with each student on a one-to-one basis. Each student must submit a "contract of ceramics project" subject to instructor's approval. Studio six hours.

ART 4701 Special Methods in Art
Prerequisites: Admission to student teaching phase of teacher education program and concurrent enrollment in SEED 4809. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching art.

ART 4703 Senior Project and Exhibition
Prerequisite: Review of student's progress during junior year. This is a required course for graphic design and fine arts majors and may serve as an elective for art education majors. Additional special problems courses may be required as a result of the review.

ART 4803, 4813 Printmaking Studio II, III
Prerequisite: ART 3813. A concentration on printmaking techniques which will develop additional strength and capability in the student. Studio six hours.

ART 4991-4 Special Problems in Art
This course requires advance approval by the instructor, department head, and the dean of school. Designed to provide certain advanced students with further concentration in a particular area.

Biology

BIOL(PHSC) 1004 Principles of Environmental Science
This course is designed to bring the student to a basic but informed awareness of and responsible behavior toward our environment and the role of the human race therein. The content will include a study of the philosophical and scientific basis for the study of ecosystems and the environment, the nature of ecosystems, the techniques used to study the environment, the origin and development of current environmental problems, the interdisciplinary nature of environmental studies, the processes of critical thinking and problem solving, and the moral and ethical implications of environmentally-mandated decisions. Lecture three hours, Lab three hours. $10 laboratory fee.

BIOL 1014 Introduction to Biological Science
Each semester. An introduction to the major terms and concepts that explain biological science, with an emphasis on the development of this scientific perspective and its effect on humans. May not be taken for credit after completion of BIOL 1114, 1124, or 1134. Duplicate credit for BIOL 1003 and 1014 will not be allowed. Lecture three hours. Laboratory two hours. $10 laboratory fee.

BIOL 1114 Principles of Biology
Each semester. May not be taken for credit after completion of BIOL 1014. An in-depth study of biological principles and the interrelationships of biology with other sciences. Topics included are: cellular structure, intermediary metabolism and differentiation, population genetics, ecology, and evolution. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 1124 Principles of Zoology
Each semester. A survey of the major animal phyla: morphology, physiology, and natural history. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 1134 Principles of Botany
Each semester. Introduction to the structure, function, classification, and importance of nonvascular and vascular plants. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 2004 Basic Human Anatomy and Physiology
Each semester. Prerequisite: BIOL 1014 or BIOL 1114. This course may not be taken for credit after completion of BIOL 2014, 3074, or equivalent. This course is intended for students who have a need for basic studies in functional aspects of the organ systems of the human body. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 2014 Human Anatomy
Spring. Prerequisite: Admission by advisor/instructor approval. This is an introductory course in human anatomy which should be useful to students in the biological and health-oriented fields. The course is designed to present an introduction to the unified concepts and data that contribute to a basic understanding of the structure of the human body. The course will include familiarization with essential technical vocabulary; reference to general functions of organs and organ systems; and brief encounters with histology, embryology, and comparative anatomy. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL(AHS) 2022 Medical Laboratory Orientation and Instrumentation, Laboratory
Fall. Enrollment is limited to students enrolled also in BIOL 2023. Topics covered will include laboratory orientation, laboratory procedures/techniques, introduction to clinical laboratory instrumentation (both manual and automated), quality control principles, and care of equipment. Laboratory four hours per week. $10 laboratory fee.

BIOL(AHS) 2023 Medical Laboratory Orientation and Instrumentation
Fall. Enrollment is limited to medical assistant and/or medical technology majors who have completed at least BIOL 1114 or BIOL 1124 (AHS 2013 recommended) and are in the final year of their program at Tech. This course is concerned with both the theoretical and practical application of a wide range of clinical duties performed by the medical assistant and medical technologist. Topics covered will include hematology, urinalysis, hematostatic processes, body chemistry, microbiology, blood typing, and electrocardiography. Lecture three hours.

BIOL(CHEM, GEOL) 2111 Environmental Seminar
(See BIOL 4111).

BIOL(PHSC) 3003 Science in Elementary and Middle School Education
Prerequisite: Junior standing. Materials, methods, and procedures for teaching modern elementary science. Includes the development of invitations to inquiry in science and the application of a modern science curriculum to the elementary and middle schools.

BIOL 3004 Plant Taxonomy
Spring. Prerequisite: BIOL 1114 and 1134 or permission of instructor. An overview of the major principles of classification, identification, naming, and collection of representatives of vascular plants. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL(PHSC) 3013 Science Education in the Secondary School
Fall. Prerequisites: CHEM 2124, PHYS 2014 and 2124, BIOL 1114, 1124, and 1134. A course outlining methods, materials, and procedures for secondary science education. Curriculum development and planning skills utilizing various instructional media and methods are emphasized. Design and execution of learning activities for a secondary school setting are required. Lecture/lab three hours. $10 laboratory fee.

BIOL 3014 Comparative Anatomy
Prerequisite: BIOL 1124. A comparative study of the vertebrate classes in terms of their organ systems. An emphasis is placed on evolution from aquatic to terrestrial forms and significant phylogenetic trends. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL(PSY) 3023 Animal Behavior
Fall. An in-depth introduction to animal behavior. The course focuses on comparisons of behavioral patterns exhibited by species on a gradient from simple to complex organisms and will cover the entire range of behavioral responses from simple taxes to complex learning. Lecture two hours, laboratory two hours. $10 laboratory fee.

BIOL 3024 Embryology
Prerequisite: BIOL 1124. A comparative study of the development of the frog, pig, and chick, and an introduction to human embryology. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 3034 Genetics
Each semester. Prerequisites: BIOL 1114 (or equivalent) and MATH 1113 (or higher). Introduction to and discussion of the principles of Mendelian, molecular and population genetics with a strong emphasis on problem solving. Laboratory exercises will involve hands-on experience with microbes, plants, animals and fungi using traditional and molecular techniques. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 3043 Conservation
Spring. A study of natural resources, their utilization in a technical society, and factors leading to their depletion. Lecture three hours.

BIOL 3054 Microbiology
Each semester. Prerequisites: One semester of chemistry and one semester of biology. An introduction to the microbial world with an emphasis on prokaryotes. Identification of bacteria based on staining, immunologic reactions, morphology and physiology. Symbionts and pathogens of human and domestic animals. Principles of control using chemical and physical agents. An overview of virology and immunology. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 3064 Parasitology
Spring. Prerequisite: BIOL 1124. A survey of parasitism in the various phyla. Special emphasis is given to parasites that affect humans. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 3074 Human Physiology
Fall. Prerequisites: C grade or better in BIOL 2014 and CHEM 1114 or CHEM 2124. An introduction to the function of vertebrate body systems, i.e., muscle action, digestion, circulation, nervous control, endocrine, metabolism and respiration, with special emphasis on the human body. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL(FW) 3084 Ichthyology
Fall. Prerequisites: BIOL 1124. Systematics, collection, identification, natural history, and importance of fishes. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 3094 Entomology
Fall, Prerequisite: BIOL 1124. Introduction to the world of insects: morphological and physiological adaptations, classification, methods and collecting and preserving common insects. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL(CHEM, GEOL) 3111 Environmental Seminar
(See BIOL 4111).

BIOL(FW) 3114 Principles of Ecology
Each semester. Prerequisites: BIOL 1124, 1134, and one semester of chemistry. Responses of organisms to environmental variables, bioenergetics, population dynamics, community interactions, ecosystem structure and function, and major biogeographical patterns. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 3124 General Physiology
Each semester. Prerequisites: BIOL 1114, 1124, 1134 and CHEM 2124. An in-depth study of basic physiology employing examples of both plants and animals. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL 3134 Invertebrate Zoology
Spring. Prerequisites: BIOL 1114, 1124. Morphology, physiology, natural history and taxonomy of major invertebrate phyla. Laboratory maintenance and preservation techniques. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL(FW) 3144 Ornithology
Spring. Prerequisite: BIOL 1124. An introduction to the biology of birds. The course covers aspects of anatomy, physiology, behavior, natural history, evolution, and conservation of birds. Laboratories address field identification and natural history of the birds of Arkansas. Students will be expected to participate in an extended 5-7 day field trip. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL(FW) 3154 Mammalogy
Fall. Prerequisite: BIOL 1124. Taxonomy, identification, ecology, and natural history of the mammals. Lecture three hours, laboratory two hours. $10 laboratory fee.

BIOL(FW) 3163 Biodiversity and Conservation Biology
Spring. Prerequisites: FW(BIOL) 3114 and one of the following: BIOL 3004, FW(BIOL) 3084, BIOL 3094, BIOL 3134, FW(BIOL) 3144, FW(BIOL) 3154, BIOL 4224, or permission of instructor. The concepts of, processes that produce, and factors that threaten biological diversity are introduced and examined. Further emphasis is placed on unique problems associated with small population size, management of endangered species, and practical applications of conservation biology. Lecture three hours.

BIOL(NUR) 3803 Applied Pathophysiology
Spring. Prerequisites: BIOL 2014 and BIOL 3074. This course focuses on the mechanisms and concepts of selected pathological disturbances in the human body. Emphasis is placed on how the specific pathological condition effects the functioning of the system involved, as well as its impact on all other body systems. Lecture 3 hours.

BIOL(PHSC) 4003 History and Philosophy of Science
On demand. A course in the historical development and philosophical basis of modern science. BIOL (PHSC) 5003 may not be taken for credit after completion of this course. Three hours lecture.

BIOL 4023 Immunology
Spring. Prerequisites: Four hours each in biology and chemistry and/or consent of instructor. An overview of the human immune system, including cellular and humoral defense mechanisms, immunity to infection, hypersensitivity, transplant rejection, and tumor destruction. Immune deficiency and autoimmune diseases. Antibody structure and the use of antibodies in medicine and research. Three hours lecture.

BIOL(FW) 4024 Limnology
Spring. Prerequisite: BIOL(FW) 3114. A study of physical and chemical processes in fresh water and their effects on organisms in lakes and streams. Laboratory sessions and field trips demonstrate limnological instrumentation and methodology. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 4033 Cell Biology
Fall. Prerequisites: BIOL 1114, 1124 or 1134 plus four additional hours of biology and one course from BIOL 3034, 3054, 4023 or CHEM 3343; eight hours of chemistry. The primary goal of this course is to introduce the basic cell structures and the molecular mechanisms whereby the cell functions through the directed application of energy and processing of information. Topics include methods of cell study, cellular organelles and their ultrastructures, membrane structure and function, cell differentiation, and reproduction. Lecture three hours.

BIOL 4044 Dendrology
Fall. Prerequisites: BIOL 1114, 1134. A study of woody plants with emphasis on field recognition throughout the year. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 4054 Vertebrate Histology
Prerequisites: BIOL 1114, 1124 and an additional four hours in biology. A study of functional/structural relationship of cells, tissues, and organs. Exercises in the preparation and observation of tissues and development of general principles of micro-techniques. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 4064 Evolutionary Biology
Prerequisite: BIOL 3034 or permission of instructor. This course focuses upon the principles and major concepts in evolutionary biology from a historical and contemporary viewpoint. Morphological and molecular evolution, population genetics, systematics, the fossil record, a history of life on earth, macroevolution, and adaptation are among the topics examined in this course. Lecture 3 hours, lab 3 hours. $10 laboratory fee.

BIOL 4091 Coastal Ecology
Spring. Restricted to senior majors in the Department of Biological Sciences and others upon approval of instructor. Course provides an introduction to coastal ecology, as represented by the Mississippi Gulf Coast. Coastal plants, animals, their interactions, and relationship to the physical environment will be studied during this trip to the Gulf Coast Research Laboratory. Investigations will be conducted in the marshes, bays, estuaries, bogs, and barrier island system near the Laboratory. Students bear the cost of food and a nominal housing fee.

BIOL(CHEM, GEOL) 4111 Environmental Seminar
Spring. A seminar for students pursuing the environmental option of biology, chemistry, or geology and other students interested in environmental sciences.

BIOL 4116 Biology Internship
Prerequisite: junior or senior standing. The course will allow students to gain experience in an occupational environment. Students will be placed in positions under the direction of a faculty advisor and work supervisor with approval of the program committee. The program will emphasize application of classroom knowledge to career goals. A minimum of 400 clock hours of supervision, a written or oral report, and a portfolio are required.

BIOL 4224 Herpetology
Spring. Prerequisite: BIOL 1124. A course dealing with the origin, phylogeny, anatomical and physiological features, classification, population dynamics, behavior, and distribution of amphibians and reptiles. Taxa included are families of the world, genera of North America, and species of Arkansas. Lecture two hours, laboratory four hours. $10 laboratory fee.

BIOL 4701 Special Methods in Biology
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4909. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching biology.

BIOL 4891 Seminar in Biology
Each semester. Designed to integrate all aspects of biology by covering current topics in many fields of biology and to acquaint the student with fields of biology not covered in the general curriculum.

BIOL 4991-4 Directed Research
Each semester. Open to biology majors with approval of department head and the individual instructor who will advise on research topic. Research may vary to fit the needs and interests of the student. Unless permission is granted by the department head, no more than two credit hours will be given in any semester for a particular research topic.

Business Administration

BUAD 1001 Keyboarding I
Computer keyboarding instruction and supervised practice with emphasis on alphabetic and numeric keyboard and ten-key pad applications.

BUAD 1003 Introduction to Business Systems
Fundamentals of organizing and managing business enterprises and the American enterprise system. Principles and framework for analysis of business problems with a systems emphasis.

BUAD 2002 Keyboarding II
Prerequisite: BUAD 1001 or equivalent. Computer keyboarding applications including speed and accuracy drills, formatting, and document production of letters, memos, reports, and tables.

BUAD 2003 Business Information Systems
Each semester. Prerequisite: Sophomore standing. An introduction to business information systems with emphasis on concepts and applications utilizing spreadsheets, word processing, and database management as productivity tools; provides basic rationale for using computers in generating and managing information necessary for the business decision-making process.

BUAD 2033 Legal Environment of Business
Each semester. Prerequisite: Sophomore standing. A survey of the basic framework of the American and international legal systems, including civil procedure, constitutional law, administrative regulation, and topics in business law, with particular emphasis on the ethical, sociocultural and political influences affecting such environments.

BUAD 2043 Principles of Word Processing
Prerequisite: BUAD 2002 or equivalent. A course designed to develop technology skills using current software; application documents include letters, memos, reports, tables, desktop publishing, and graphics for business as well as personal use.

BUAD 2053 Business Statistics
Each semester. Prerequisites: MATH 1113 and/or 2243. An introduction to basic descriptive and inferential statistics and their application to business problems. Topics covered include frequency distributions, histograms, the mean, standard deviation, variance, covariance, and correlation coefficients for samples and populations, confidence intervals and hypothesis tests for means and proportions, analysis of variance, simple linear regression, chi-square, control charts for variables and attributes, and time-series analysis.

BUAD 2073 Principles of Real Estate
An orderly approach of study to prepare students for the Uniform License Examination. Topics covered include contracts, real estate financing ownership, brokerage, valuation, settlements, arithmetic review, forms of ownership, title transfer, mortgage instruments, deeds, leases, title closing, contract laws, real estate taxes, property descriptions, and other pertinent areas.
(Additional prerequisites for 3000- and 4000-level courses are listed in the School of Business section of this catalog.)

BUAD 3023 Business Communications
Each semester. Prerequisites: 6 hours of English Composition and BUAD 2003. Course includes principles of effective business communication using technology to generate documents including letters, memos, and reports; international, ethical, legal, and interpersonal topics are integrated throughout the course.

BUAD 3063 Commercial Law
Prerequisites: BUAD 2033. An in-depth analysis of the Uniform Commercial Code and its effect on the business environment. Course focuses on sales, negotiable instruments, secured transactions, and bankruptcy. Significant federal and state statutes affecting commerce also are explored.

BUAD 4001-3 Problems in Business Administration
On demand. Prerequisites: Senior standing and permission of department head. Individual exploration of significant topics and problems in business administration under the direction of an assigned faculty member. A report will be required.

BUAD 4073 Special Topics in Law
Prerequisite: BUAD 2033. Course offers an in-depth exploration of selected legal issues affecting business. The primary focus of the course will vary from offering to offering; thus the course may be taken more than once.

Chemistry

CHEM 1114 A Survey of Chemistry
Each semester. A survey of selected topics in chemistry for life science majors. A brief introduction to fundamental concepts, atomic structure, chemical bonding, and periodic law as applied in the life sciences and allied areas. Lecture three hours, laboratory three hours. $10 laboratory fee. Duplicate credit for CHEM 1114 and CHEM 2124 or 2134 will not be allowed.

CHEM(BIOL,GEOL) 2111 Environmental Seminar
(See CHEM 4111).

CHEM 2124 General Chemistry I
Each semester. Prerequisites: scores of 21 or higher on the math and the English portions of the enhanced ACT, a "C" or better in CHEM 1114, or approval by the department head of Physical Sciences. The first of a two semester sequence designed for science and engineering majors. Topics include qualitative and quantitative, applied and theoretical analyses of the interactions of matter: atoms, molecules, ions, the mole concept, chemical equations, gases, solutions, intermolecular forces, thermochemistry, quantum theory, periodic law, ionic and covalent bonding, molecular geometry. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 2134 General Chemistry II
Each semester. Prerequisite: completion of CHEM 2124 or equivalent. A continuation of CHEM 2124, encompassing chemical kinetics, equilibrium, acid/base systems, atmospheric chemistry, thermodynamics, electrochemistry, descriptive inorganic chemistry and nuclear chemistry. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 2143 Environmental Chemistry
Spring, Prerequisite: One semester of chemistry. An examination of the chemistry of the environment including the origins, natural processes, and anthropogenic influences on the earth. Will not be counted for chemistry credit toward the ACS approved BS in chemistry.

CHEM 2201 Chemistry Seminar
(See CHEM 4401).

CHEM 2991-3 Special Problems in Chemistry
Permission of instructor. One to three credits, depending on the nature and extent of the problem. This course is designed to encourage creative, independent scientific activity on the part of advanced students. Problems will be designed to fit the future aspirations of individual students and will be supervised by a faculty preceptor.

CHEM(BIOL,GEOL) 3111 Environmental Seminar
(See CHEM 4111).

CHEM 3245 Quantitative Analysis
Spring. Prerequisites: CHEM 2134. This is a lab intensive course, that focuses on a variety of experimental techniques that enables the chemist to characterize and quantify many types of samples. Lecture three hours, laboratory six hours. $10 laboratory fee.

CHEM 3254 Fundamentals of Organic Chemistry
Fall. Prerequisites: CHEM 2124 or CHEM 1114. An introduction to the chemistry of covalently bonded carbon. Special emphasis will be given to descriptive and structural aspects of Organic Chemistry. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 3264 Mechanistic Organic Chemistry
Spring. A continuation of CHEM 3254 with special emphasis on theory and mechanisms of organic reactions. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 3301 Chemistry Seminar
(See CHEM 4401).

CHEM 3324 Physical Chemistry I
Fall. Prerequisites: CHEM 3245, PHYS 2024, or 2124, MATH 2924. Upper division chemistry course designed for chemistry, physical science, and engineering majors desiring a deeper understanding of the physical and mathematical processes of chemistry. Course content includes ideal and non-ideal gases, laws of thermodynamics, enthalpy, heat capacity, free energy, Maxwell's relations, chemical and phase equilibria, electrochemical equilibria, fugacities, activity coefficients, mixtures, colligative properties, surfaces. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 3334 Physical Chemistry II
Spring. Prerequisites: MATH 2924, PHYS 2024 or 2124, CHEM 3324 and 3245. Continuation of CHEM 3324 (Physical Chemistry I). Upper division chemistry course designed for chemistry, physical science and engineering majors desiring a deeper understanding of the physical and mathematical processes of chemistry. Course content includes chemical kinetics and reaction mechanisms, molecular collisions, transition state theory, quantum mechanics, electronic structure of atoms and diatomic molecules, molecular spectroscopy, solid-state chemistry. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 3341 Biochemistry Laboratory
Corequisite: CHEM 3343. An introduction to biochemical laboratory techniques in purification, identification, and characterization of carbohydrates, lipids, proteins, and vitamins. Laboratory three hours. $10 laboratory fee.

CHEM 3343 Principles of Biochemistry
Upon demand. Prerequisite: CHEM 3254. The chemistry of metabolism of carbohydrates, lipids, and proteins. Basic concepts of the biochemistry of vitamins and enzymes, biological oxidations, and bioenergetics. Lecture three hours.

CHEM 3353 Fundamentals of Toxicology
Upon demand. Prerequisite CHEM 3254. An introduction to the science of poisons. Toxicological principles studied include structures, dose/response relationships, metabolism, mechanism of action, and gross effects of chemicals.

CHEM 3363 Metabolic Biochemistry
Prerequisites: CHEM 3343. The study of metabolism of carbohydrates, lipids, proteins, and nucleic acids, and the study of biological information flow in organisms. Metabolic pathways and genetic informational flow in plants and animals will be addressed. Lecture three hours.

CHEM 3991-3 Special Problems in Chemistry
Permission of instructor. One to three credits, depending on the nature and extent of the problem. This course is designed to encourage creative, independent scientific activity on the part of advanced students. Problems will be designed to fit the future aspirations of individual students and will be supervised by a faculty preceptor.

CHEM(BIOL,GEOL) 4111 Environmental Seminar
Spring. A seminar for students pursuing the environmental option of chemistry, biology, or geology and other students interested in environmental sciences.

CHEM 4401 Chemistry Seminar
Spring. Participants will prepare written reviews, present oral reports, and defend their reports. Emphasis will be on the use of the library and current chemical research.

CHEM 4414 Instrumental Analysis
Fall. Prerequisite: CHEM 3245. This course is designed for chemistry majors. It will focus on the understanding of the instrumental methods used in analytical chemistry. A variety of spectrometric, chromatographic, and electrometric techniques will be covered in the lecture and laboratory. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 4422 Advanced Organic Chemistry
Upon demand. Prerequisite: CHEM 3264. An expansion and/or continuation of theoretical topics addressed in CHEM 3264.

CHEM 4424 Advanced Inorganic Chemistry
Spring. Prerequisite: CHEM 3324. CHEM 4424 is a senior level inorganic chemistry course. The course gives an overview of some of the many advanced areas of study in inorganic chemistry including atomic and molecular structure, acid-base chemistry, symmetry and group theory, coordination chemistry and organometallic chemistry. Lecture three hours, laboratory three hours. $10 laboratory fee.

CHEM 4432-4 Advanced Topics in Chemistry
Upon demand. Prerequisite: Permission of instructor. Various advanced topics in any specialty area of chemistry, e.g., polymers, coordination chemistry, and nuclear chemistry.

CHEM 4991-4 Special Problems in Chemistry
Permission of instructor. One to four credits, depending on the nature and extent of the problem. This course is designed to encourage creative, independent scientific activity on the part of advanced students. Problems will be designed to fit the future aspirations of individual students and will be supervised by a faculty preceptor.

Chinese

CHIN 1014 Beginning Chinese I
Emphasis on conversation; introduction to basic grammar, reading, writing, and culture.

CHIN 1024 Beginning Chinese II
Continued emphasis on conversation and fundamental language skills.

CHIN 2014 Intermediate Chinese I
Prerequisite: Beginning Chinese II (CHIN 1024) or equivalent. Instruction designed to develop communication skills and knowledge of grammar, reading, writing, and culture.

CHIN 2024 Intermediate Chinese II
Prerequisite: Intermediate Chinese I(CHIN 2014) or equivalent. Instruction designed to enhance communication skills and knowledge of grammar, reading, writing, and culture.

Computer and Information Science

COMS 1003 Introduction to Computer Based Systems
(Non-majors only.) A general survey of computing that provides a basic background in computer technology, terminology, concepts, and operation. The students are introduced to several software packages commonly found in today's computing environments.

COMS 1103 FORTRAN Programming
Prerequisite: MATH 1113 or equivalent. An introduction to programming using the FORTRAN language with emphasis on numerical computing, including the use of scientific subroutine libraries.

COMS 1201 Introduction to Spreadsheets
Prerequisite: COMS 1101 or equivalent experience. An introduction to the use of spreadsheets for persons with little or no prior experience. Coverage includes the use of commands, simple functions and formulas, printing, and simple graphs.

COMS 1203 Programming in BASIC
An introduction to programming using BASIC and/or Visual Basic.

COMS 1301 Introduction to Word Processing
Prerequisite: COMS 1101 or equivalent experience. An introduction to word processing for those with little or no prior experience. Coverage includes basic text entry and editing, document formatting, block operations, spell checking, printing, and loading and saving files.

COMS 1303 Computer Applications for Technical Majors
Corequisite: MATH 1113 or equivalent. The purpose of this course is to give the students in engineering, mathematics, chemistry, and other technical disciplines the prerequisite computer skills necessary to make effective use of the computer in their major degree programs where computer applications have been integrated into the course of study.

COMS 1333 Web Publishing I
This course introduces the student to the World Wide Web and design and development of web pages. Topics covered include HTML, images, style sheets, multimedia, CGI and forms, and other topics as appropriate. The students will learn how to publish a web site to a server and maintain the site. This course will focus on design issues.

COMS 1401 Introduction to Database Systems
Prerequisite; COMS 1101 or equivalent experience. An introduction to database management systems for those with little or no prior experience. Coverage includes elementary database design, record layouts, simple selection operations, and basic report generation.

COMS 1403 Computer and Information Science Orientation
(Required of all first-time entering freshmen who have declared a major in computer science.) An introduction to the profession of computing and information systems. Topics include ethics, professionalism, and opportunities within the field as well as an overview of hardware, software, and information system concepts and terminology. Students will be introduced to available computing facilities and software. Course will be taught using a combination of lecture and computer laboratory.

COMS 1521 Computer-Aided Design Graphics
Prerequisite: COMS 1501 or consent. An introduction to Computer-Aided Design (CAD) packages. Hands-on experience will be gained in the use of one or more such packages and their applications in various disciplines, particularly in drafting.

COMS 1561 Presentation Graphics
Prerequisite: COMS 1501 or consent. Covers the use of presentation graphics packages in the preparation of graphs, charts, and presentations. Students will complete a presentation-quality project related to their field of study.

COMS 1903 Applied Computer Graphics
Prerequisite: Three hours in computer science. A fundamental and hands-on coverage of various PC-based drawing and graphics packages.

COMS 2003 Microcomputer Applications
This course provides the knowledge and skill required to apply microcomputers in a variety of disciplines. Students will gain hands-on experience in the use of several popular software packages including word processing, spreadsheets and database management. Students will be required to apply each package on projects relating to their field of study. Includes an introduction to the management of a microcomputer system using Windows. A basic background in computer technology, concepts, and operation comparable to COMS 1003 is required for all students enrolling in this course.

COMS 2103 Foundations of Computer Programming I
Corequisite: MATH 1113. An introduction to structured programming using C++. This course provides the fundamental programming knowledge required for further study in the field of computer science.

COMS 2163 Scripting Languages
This course introduces the student to script writing in several languages. The primary categories of scripts will be Unix shell, text processing, and Perl. CGI Scripts, using Perl, will be introduced.

COMS 2203 Foundations of Computer Programming II
This course is a continuation of COMS 2103. Topics include multi-dimensional arrays, functions, string processing, and an introduction to object-oriented programming.

COMS 2213 Data Structures
Prerequisite: COMS 2203 or consent. This course involves a study of abstract data structures and the implementation of these abstract concepts as computer algorithms.

COMS 2223 Computer Organization and Programming
Prerequisite: COMS 2203. Covers computer architecture and machine-level programming in assembly language. Considerable practical experience will be gained through programming projects. Topics include internal data representation and manipulation, physical, and logical level input-output macros.

COMS 2233 Introduction to Databases
This course develops a detailed understanding of a database software package developed for microcomputer applications. Topics include how to design, implement, and access a personal database. Entity relationship diagrams are emphasized in design. The use of macros, data conversion operations, linking, and complex selection operations are used in implementation. Advanced report generation mechanisms are covered along with custom-designed menus and user interfaces.

COMS 2333 Web Publishing II
This course is a continuation of COMS 1333. Topics include Web Server installation and configuration, writing and using CGI scripts, security issues, and ethics. Additional topics may include active server pages, DHTML, and XML.

COMS 2503 AS/400 Operations Using RPG
Prerequisite: COMS 2203 or consent. The student will study the aspects of computing that are characteristic of minicomputer use in the business environment. The RPG language will be used to solve typical business problems using the AS/400 platform.

COMS 2703 Computer Networks
This course covers how to install and administer a local area network and connect it to the Internet. Topics include network architecture, hardware, and software, along with popular protocols for establishing connectivity for sharing resources such as printers and files.

COMS 2713 Survey of Operating Systems
Several Operating Systems (such as Unix, Microsoft, AS/400) will be examined with regard to the user's view of the system. This view includes the types of files supported, the kinds of operations that can be performed on files (from the shell and from programs), the mechanisms for starting and controlling processes (i.e. "running programs"), some basic utility programs that a beginning or intermediate level administrator would need to use.

COMS 2723 PC Computer Architecture and Operating Systems
Organization, construction, and diagnosis of PC computers, as well as the installation and configuration of several operating systems, such as DOS, Windows 95, Windows 98, Windows NT, and Linux. The lab component includes installation of PC components and diagnosis of PC conflicts.

COMS 2803 Programming in C
Prerequisites: COMS 2203, or COMS 1103 and ENGR 2134, or consent. Design, coding, debugging, and implementation of C programs. Introduction to the UNIX operating system.

COMS 2981-4 Special Topics
This course will be offered on an "as-needed" basis to cover those topics and subject areas in computing that are emerging in a technological sense, but that do not yet warrant the addition of a new course to the curriculum. This course may be repeated for credit if course content differs.

COMS 3033 Application Program Development I
Prerequisite: COMS 2223. Program design, development, testing, implementation, and maintenance in a business application environment. Topics include file structures, batch file processing, and indexed file processing.

COMS 3043 Application Program Development II
Prerequisite: COMS 3033; ACCT 2003. A continuation of COMS 3033. Topics include advanced indexed file processing, interactive processing, and cross-platform development. One or more small systems will be implemented.

COMS 3163 Web Programming
This course expands on the concept of CGI programming introduced in COMS 2163. Topics include features of web forms and CGI processing via a scripting language. Basic database interaction and Server-Side Includes (SSI), client-side implementation of pop-up windows, form validation, cookies, security, and other concepts will also be discussed.

COMS 3213 Advanced Data Structures and Algorithm Design
Prerequisites: COMS 2213 and MATH 2703. This course is a continuation of COMS 2213. Concepts, implementation, and application of B-trees, AVL trees, hashing, graphs, and other abstract data structures will be studied.

COMS 3333 Implementation of e-Commerce
This course covers technical issues involved in developing online stores. The primary emphasis of this course will be the design, implementation, and configuration of the “shopping carts” used for online business. Particular attention will be paid to areas of security, privacy, and protection.

COMS 3503 Visual Programming
Prerequisite: COMS 2003 (or equivalent) and COMS 2213. This course covers the design and development of event-driven programs using an object-oriented visual programming language such as Visual Basic.

COMS 3603 Principles of Management Science
Prerequisite: MATH 4003 or equivalent. Simplex method of linear programming, dual problem and sensitivity analysis, and integer programming. Emphasis is on application of these linear systems with case studies and examples from the areas of finance, marketing, and production. Large problem applications are run on the computer.

COMS 3703 Operating Systems
Prerequisite: COMS 2213 and 2223. This course explores the fundamental concepts upon which modern operating systems are based. Topics include CPU, memory, file and device management, concurrent processes, protection mechanisms, and distributed systems. Several important algorithms will be implemented by the student.

COMS 3803 Computer Applications in Accounting and Business
Prerequisites: COMS 2003 or equivalent, ACCT 2013, Junior standing. Topics to be covered include intermediate and advanced microcomputer applications in business.

COMS 4013 Operations Research
Prerequisite: MATH 3153. A general coverage of the field of operations with discussion of the planning and control aspects of an OR study. Concentration of the basic models and analytical techniques of operations research, including mathematical programming and probabilistic models.

COMS 4033 Systems Analysis and Design I
Prerequisites: COMS 3043 and ACCT 2013. Students in this course will apply the concepts, tools, procedures, and techniques involved in the development of information systems. Emphasis is placed on the systems approach to problem-solving, user involvement, the management of quality, project control, and teamwork.

COMS 4043 Systems Analysis and Design II
Prerequisite: COMS 4033. A continuation of COMS 4033, with emphasis on the application of the theory and techniques of the previous course. Students will program, implement, and thoroughly document a complete system.

COMS 4053 Information Systems Resource Management
Prerequisite: COMS 3803 or COMS 3033. A study of the principles and concepts involved in the management of organizational maintenance of all information resources, including hardware, software, and personnel. Includes coverage of departmental functions within computer/information services, as well as legal, ethical, and professional issues, quality management, and the strategic impact of information systems

COMS 4103 Organizations of Programming Languages
Prerequisite: COMS 2223. This course emphasizes the comparative structures and capabilities of several programming languages. Major emphasis will be placed on language constructs and the run-time behavior of programs.

COMS 4203 Database Concepts
Corequisite: COMS 3043. Problems associated with common data processing systems, reasons for database system development; objectives such as data, device, user, and program independence; hierarchical, network, and relational models; data structures supporting database systems; operational considerations such as performance, integrity, security, concurrency, and reorganization; characteristics of existing database systems.

COMS 4253 Computer Graphics
Prerequisites: COMS 2203 and MATH 4003 or consent of instructor. Developing algorithms to do line drawing, two and three dimensional displays, clipping and windowing, and hidden line removal. Other areas will include graphic I/O devices, display processors, and data structures for graphics.

COMS 4303 Client/Server Systems
Prerequisite: COMS 3503 and COMS 4203. This course provides in-depth coverage of client/server concepts. The student will use object-oriented visual programming tools and SQL in the construction of client/server programs. Emphasis will be placed on the proper design of server databases and on programming techniques used in event-driven environments.

COMS 4353 Artificial Intelligence
Prerequisite: COMS 2213 and junior standing. General concepts, wide overview of AI history, and development and future of AI. Implementation of AI techniques using the LISP and or PROLOG languages. Additional topics include pattern recognition. natural language processing, learning process, and robotics.

COMS 4403 Compiler Design
Prerequisite: COMS 2223 and COMS 4103. This course covers syntax translation, grammars and parsing, symbol tables, data representation, translating control structures, translating procedures and functions, processing expressions and data structures, and multipass translation. Students will design a computer language and implement the compiler.

COMS 4603 System Programming
Prerequisite: COMS 3703 or 4903. This course is intended to give the student practical experience in the implementation, modification, and maintenance of system software.

COMS 4703 Data Communications and Networks
Prerequisite: COMS 2223. Basic elements and functional aspects of the hardware and software required to establish and control data communications in a stand-alone or network environment. Topics include communication protocols, media, network topologies, and system support software.

COMS 4803 System Simulation
Prerequisites: Three-hour programming course and junior/senior classification. An introduction to simulation methodology as it applies to the analysis and synthesis of systems. Design of simulation experiments and the analysis of data generated therefrom. Random sampling of the Monte Carlo method are used to develop computer procedures for simulated sampling. A broad range of applications is discussed.

COMS 4903 Systems Software and Architecture
Prerequisite: COMS 2223. This course covers the implementation of production operating systems along with the fundamentals of digital logic and machine architecture.

COMS 4981-3 Seminar in Computer Science
A directed seminar in an area of computer science. Seminars will focus on topics relating to emerging technologies which are beyond the scope of other computer science courses. This course may be repeated for credit if course content differs.

COMS 4991-4 Special Problems in Computer Science
This course will allow the student to work individually or as part of a small team to study and design practical computerized systems to solve problems of particular interest to the student(s). This course may be used to offer a variety of computer science related course work to strengthen the student's knowledge in areas not covered in other course offerings.

Criminal Justice

CJ (SOC) 2003 Introduction to Criminal Justice
An overview of the criminal justice system and the workings of each component. Topics include the history, structure, and functions of law enforcement, judicial and correctional organizations, their interrelationship and effectiveness, and the future trends in each.

CJ 2013 Introduction to Security
An introduction to and analysis of the private security section and its relationship to the criminal justice system. Topics will include the historical development of security, its functions, limitations and concepts, technology and applications to the present and the future.

CJ(POLS) 3023 Judicial Process
The structure and operations of the state and national court systems. Emphasis is upon the role of the criminal courts in the political system and the consequences of judicial policy making.

CJ(PSY) 3033 The Criminal Mind
Prerequisite: PSY 2003 and CJ 2003 or SOC 3043 or consent. The course familiarizes students with various models, theories, and research regarding criminality from a psychological perspective. Genetic, constitutional, and biological factors will be emphasized and some practical applications to dealing with criminals will be considered.

CJ(SOC) 3043 Crime and Delinquency
Prerequisite: SOC 1003 or CJ 2003. A study of the major areas of crime and delinquency; theories of crime, the nature of criminal behavior and the components of the criminal justice system. Topics include: crime statistics, criminology research, theories of crime and delinquency, criminal typologies and operations of the criminal justice system.

CJ(RS) 3063 Probation and Parole
Prerequisite: CJ 2003 or SOC/CJ 3043. A survey of the philosophy, origin, development, rise and evaluation of probation and parole as correctional techniques.

CJ 3073 Police Administration
A survey of the leadership and management skills which are basic to the delivery of police services. The course focuses on the behavioral and functional aspects of police management as well as current issues in policing.

CJ(SOC) 3103 The Juvenile Justice System
Prerequisite: CJ(SOC) 2003 or permission of instructor. An in-depth look at the juvenile justice system including the structure, statuses and roles as well as current issues, problems, and trends.

CJ(SOC) 3153 Prison and Corrections
An introduction to and analysis of contemporary American corrections. Emphasis will be on current and past correctional philosophy, traditional and modern correctional facilities, correctional personnel and offenders, new approaches in corrections, and the relationship of corrections to the criminal justice field.

CJ(SOC) 3206 The Law in Action
Prerequisite: SOC/CJ 3043 and permission. Offered only in the summer. An examination of sociological theories of law and main currents of legal philosophy is followed by participant observation of actual community legal agencies, including police, courts, and others as available. Requires insurance fee.

CJ 4023 Law and the Legal System
A comprehensive study of judicial process and behavior in criminal and civil law. May not be taken for credit after completion of POLS 5023 or equivalent.

CJ 4053 Criminal Law and the Constitution
A survey of the procedures and issues associated with American criminal justice as viewed from a Constitutional perspective.

CJ(POLS) 4063 American Constitutional Law 1941-Present: Civil Liberties and Civil Rights
A comprehensive study of the United States Supreme Court's decisions on civil liberties and civil rights from 1941 to the present. Emphasis will be on the constitutional questions raised in these court cases and their impact on the fundamental freedoms of the Fourteenth Amendment and Bill of Rights.

CJ 4991-4 Special Problems in Criminal Justice
Prerequisite: Prior approval of instructor and department. Content is to be determined by faculty-student conference and based on student background and interest.

Driver Education

DE 4543 Driver and Traffic Education II
Prerequisites: A valid driver's license, admission to teacher education program, a driving record free from frequent and unusual violations. This course is designed to prepare teachers to organize and teach driver education and traffic safety programs in secondary schools. It includes administration, supervision of personnel, design of facilities, and a research project. May not be repeated for credit as DE 5543 or equivalent.

DE 4613 Driver and Traffic Education I
Prerequisites: A valid driver's license, admission to teacher education program, and a driving record free from frequent and unusual violations. This course is designed to prepare teachers to organize and teach driver education and traffic safety programs in secondary schools. This course provides a survey of materials and methods of instruction plus evaluation of textbooks and in-car training of a student driver. Two hour lecture, two hours laboratory. May not be repeated for credit as DE 5613 or equivalent.

Early Childhood Education

Associate Degree Program

ECE 2112 Basic Child Growth and Development I
Prerequisite: Score of 75 or above on the writing portion of the COMPASS or 19 or above on the English portion of the ACTE. A study of the developmental principles of the developmental stages of the child from birth to age eight. Involves both observation and lecture.

ECE 2212 Basic Child Growth and Development II
Prerequisite: Completion of ECE 2112. A study of the developmental principles of the developmental stages of the children from age nine to eighteen. Involves both observation and lecture.

ECE 2312 Foundations and Theories in Early Childhood Education
Prerequisite: Score of 75 or above on the writing portion of the COMPASS or 19 or above on the English portion of the ACTE. An introduction to the profession including historical and social foundations, awareness of value issues, ethical and legal issues, staff relations, and the importance of becoming an advocate for children and families.

ECE 2513 Curriculum for Early Childhood Education
Corerequisites: ECE 2112 and ECE 2312. A study and application in the field of the theoretical base for early learning. Covers curriculum for young children based on research and theory.

ECE 2613 Methods and Materials Using Developmentally Appropriate Practices and Activities for Young Children
Prerequisites: Completion of ECE 2112 and 2312. A combination of classroom and field-based experiences stressing developmentally appropriate techniques and materials fostering successful development and learning in young children.

ECE 2991-9 Practicum in Early Childhood Education
Prerequisites: Completion of 12 hours of ECE courses taken for meeting assessment requirements for hte Child Development Associate credential. Variable credit available for documented early childhood training related to the principles and procedures which support the development and operation of an effective early childhood education program. Credit may also be awarded for portfolio development for the Child Development Associate assessment. Equivalencies for awarding credit will be determined by the advisor in accordance with guidelines of the National Association for the Education of Young Children (NAEYC). Additional coursework approved by the advisor may be applied toward any balance of credit needed to complete the nine hours.

Early Childhood Education

Bachelor Degree Program

ECED 2001 Introduction to Early Childhood Education
Must be taken concurrently with ECED 2002. This course studies the social, historical, and philosophical foundations in American Education. Basic technology skills including the portfolio will be introduced.

ECED 2002 Field-Based Experience Seminar in Early Childhood
Must be taken concurrently with ECED 2001. This course provides an opportunity for prospective education majors to participate in guided classroom observation with time for reflection and discussion.

ECED 3013 Technology in the Early Childhood Classroom
An instructional technology course for preservice teachers introducing students to the incorporation of technology into instructional situations. Students will become familiar with classroom computer utilization for instructional and classroom management technology; state and national standards for technology and curriculum areas and create lessons centered upon those standards.

ECED 3023 Foundations of Early Childhood Education
Must be taken concurrently with ECED 3033. An introduction to the field of early childhood education, including a history of the movement, influencing concepts and theories, and relevant issues.

ECED 3033 Child Development
Must be taken concurrently with ECED 3023. A study of the physical, cognitive, and psychosocial development of the individual beginning with the prenatal period and continuing through early adolescence. This course includes an on-site field experience in settings for young children.

ECED 3043 Developmentally Appropriate Practice
Prerequisite: ECED 3023 and ECED 3033 and admission to Phase II. Corequisite: ECED 3053. A study of developmentally appropriate practice for young children, birth through age 9. This exploration is an integrated curricular study of appropriate early childhood curriculum, materials, environments, assessments, expectations, instructional strategies, and considerations for early childhood educators. Appropriate field observations and experiences are an integral part of this course, and will be integrated with course content.

ECED 3053 Children and Families in a Diverse Society
Prerequisite: ECED 3023 and ECED 3033 and admission to Phase II. Corequisite: ECED 3043. A study of the characteristics of young children with developmental disabilities in the contexts of family theory and intervention. Particular emphasis will be placed on how these characteristics impact the child's family and educational needs.

ECED 3113 Integrated Curriculum I (3-5 years)
Prerequisites: ECED 3043 and ECED 3053. Corequisites: ECED 3122. ECED 3162, ECED 3172, ECED 3183, ECED 3192. In this course, pre-service teachers build a working knowledge of curriculum strategies and techniques on which to base wise curriculum decision making for children ages 3-5. This course is connected to the ECED 3122 Practicum.

ECED 3122 Practicum I
Prerequisite: ECED 3043 and ECED 3053. Corequisites: ECED 3113, ECED 3162, ECED 3172, ECED 3183, ECED 3192. Practicum I is designed to provide pre-service teachers with field-based experiences for children age 3-5 years.

ECED 3162 Diagnosis and Assessment of Young Children I (3-5 years)
Prerequisite: ECED 3043 and ECED 3053. Corequisite: ECED 3113, ECED 3122, ECED 3172, ECED 3183, ECED 3192. A study of observational and developmentally appropriate tools and methods of collecting data for decision making. Emphasis is on qualitative assessment techniques that are specific to 3-5 year-old children. This course is connected to the ECED 3122 Practicum.

ECED 3172 Guiding Young Children I (3-5 years)
Prerequisite: ECED 3043 and ECED 3053. Corequisites: ECED 3113, ECED 3122, ECED 3162, ECED 3183, ECED 3192. Emphasis is placed on the guidance and management, individually and in groups, of young children ages 3-5 years. The course focuses on developmentally appropriate practices in early childhood settings. Creation of learning environments that foster social competence, build self-esteem in young children, and assist them in the exploration of ways to independantly solve problems and gain self-control are emphasized. This course is connected to the ECED 3122 Practicum.

ECED 3183 Language and Literacy I (3-5 years)
Prerequisite: ECED 3043 and ECED 3053. Corequisites: ECED 3113, ECED 3122, ECED 3162, ECED 3172, ECED 3192. A study of teaching strategies and support systems for encouraging the various areas of literacy in the 3-5 year-old child. This course is connected to the ECED 3122 Practicum.

ECED 3192 Children's Literature I (3-5 years)
Prerequisite: ECED 3043 and ECED 3053. Corequisites: ECED 3113, ECED 3122, ECED 3162, ECED 3172, ECED 3183. Study of sources and types of reading materials available for 3-5 year old children and ways to use them to enhance learning. This course is connected to the ECED 3122 Practicum.

ECED 3213 Integrated Curriculum II (6-9 years)
Prerequisite: ECED 3113. Corequisites: ECED 3222, ECED 3262, ECED 3272, ECED 3283, ECED 3292. ECED 3213 builds on the concepts presented in ECED 3113 and emphasizes developmentally appropriate curriculum for children ages 6-9; mandated curriculum; and contemporary issues related to curriculum. This course is connected to the ECED 3222 Practicum.

ECED 3222 Practicum II
Prerequisite: ECED 3122. Corequisites: ECED 3213, ECED 3262, ECED 3272, ECED 3283, ECED 3292. Practicum II is designed to provide pre-service teachers with field-based experiences for children age 6-9 years.

ECED 3262 Diagnosis and Assessment of Young Children II (6-9 years)
Prerequisite: ECED 3162. Corequisite: ECED 3213, ECED 3222, ECED 3272, ECED 3283, ECED 3292. A study of fundamental observation, assessment, and evaluation concepts and tools. Emphasis on both qualitative and quantitative methods of measuring and reporting student progress and learning. Designed to give the beginning teacher a background in the collection and interpretation of data with the goal of making valid data-driven decisions. This course is connected to the ECED 3222 Practicum.

ECED 3272 Guiding Young Children II (6-9 years)
Prerequisite: ECED 3172. Corequisites: ECED 3213, ECED 3222, ECED 3262, ECED 3283, ECED 3292. Emphasis is on the guidance and management, individually and in groups, of primary-aged children, 6-9 years. The course focuses on developmentally appropriate practices in multi-cultural school settings that encourage children to become self-regulated learners. Creation of a context for positive discipline and a guidance approach for an encouraging classroom are explored. This course is connected to the ECED 3222 Practicum.

ECED 3283 Language and Literacy II (6-9 years)
Prerequisite: ECED 3183. Corequisites: ECED 3213, ECED 3222, ECED 3262, ECED 3272, ECED 3292. A study of teaching strategies and support systems for encouraging the various areas of literacy in the 6-9 year-old child. This course is connected to the ECED 3222 Practicum.

ECED 3292 Children's Literature II (6-9 years)
Prerequisite: ECED 3192. Corequisites: ECED 3213, ECED 3222, ECED 3262, ECED 3272, ECED 3283. Study of sources and types of reading materials available for 6-9 year old children and ways to use them to enhance learning. This course is connected to the ECED 3222 Practicum.

ECED 4915 Early Childhood Education Internship
(Fifteen hour course.) An intensive field experience and campus seminar class which culminates the early childhood program. Students will spend time in early childhood environments and in campus seminars applying their knowledge and skills in reflective decision making with children and families.

Economics

ECON 2003 Principles of Economics I
Each semester. Macroeconomic analysis of output, income, employment, price level, and business fluctuations, including the monetary system, fiscal and monetary policy, and international economics.

ECON 2013 Principles of Economics II
Each semester. Prerequisite: ECON 2003. Microeconomic analysis of consumer and producer behavior. Includes theory of production and cost, the effects of market structure on resource allocation, distribution of income, and welfare economics.
(Additional prerequisites for 3000- and 4000-level courses are listed in the School of Business section of this catalog.)

ECON 3003 Money and Banking
Each semester. Nature, principles and functions of money, macroeconomic theory, development and operation of financial institutions in the American monetary system, with emphasis on processes, problems, and policies of commercial banks in the United States.

ECON 3013 Economics of Labor Relations
An overview of U.S. labor sector including demographic trends, labor unions, human capital issues and work-leisure values. A brief review of neo-classical wage theory with critiques. Selected labor sector issues such as global labor developments, public sector employment, migration/mobility and discrimination.

ECON 3073 Intermediate Microeconomic Theory
An examination of the theories of consumer behavior and demand. and the theories of production, cost and supply. The determination of product prices and output in various market structures and an analysis of factor pricing.

ECON 4001-3 Readings in Economic Theory
On demand. Prerequisites: Senior standing, background of courses needed for problem undertaken and permission of the department head. Advanced study on an individual basis is offered in money and banking, public finance, general economics, international trade, labor relations, transportation.

ECON 4033 Current Economic Problems
Emphasis is on a "way of thinking" about current economic problems including a conceptual context, critical thinking and problem solving approaches. Major domestic and global economic trends are reviewed. Current economic issues are selected for evaluation.

ECON 4053 Comparative Economic Systems
Fall. Survey of a conceptual framework for comparing national economies and for studying a global economic system. Review of the current world economic environment and of policy issues at the national and multinational levels.

ECON 4073 World Economic Systems
On demand. A study of the institutional framework of an economic system selected by the instructor. The course includes a visit to the country being studied.

ECON 4093 International Economics and Finance
A course designed specifically for economics and finance majors desiring an understanding of the interplay of economic and financial forces between nations. While developing the theoretical base underlying these forces, the course will emphasize practical aspects of cross-border flows of goods, services, and capital from the point of view of the firm. Lecture and discussion will be supplemented by analysis of cases and current events where appropriate. The content of the course should be readily applicable to any private or public sector policy-making situation involving an international dimension in which students find themselves.

Educational Foundations

EDFD 3023 Human Development
A study of the physical, emotional, mental, and social growth of the individual beginning with the prenatal period and continuing through adulthood. Secondary education students may not complete the EDFD classes on the University Center campus for credit toward their degree.

EDFD 3042 Educational Psychology
Prerequisite: Admission to Stage II of the teacher education program and completion or concurrent enrollment in EDFD 3023. General principles of learning, the learner's potentialities with attention to individual differences, the environment of effective learning, application of psychology to educational problems. May not be taken for credit after completion of EDFD 3043. Secondary education students may not complete EDFD classes on the University Center campus for credit toward their degree.

EDFD 3072 Introduction to Educational Measurements
Prerequisite: Admission to Stage II of the teacher education program and completion or concurrent enrollment in EDFD 3023. Characteristics of good school appraisal; principles and procedures in the selection and use of standardized tests; techniques in the construction and use of classroom tests; the interpretation of various types of tests. May not be taken for credit after completion of EDFD 3073. Secondary education students may not complete the EDFD classes on the University Center campus for credit toward their degree.

EDFD 4052 Teaching Exceptional Learners
Prerequisite: Admission to Stage II of the teacher education program. A study of the major areas of exceptionality including the learning disabled, mentally retarded, physically disabled, and the gifted, and of their special needs in a school program. May not be taken for credit after completion of EDFD 4053 or repeated for credit as EDFD 5052 or equivalent. Secondary education students may not complete the EDFD classes on the University Center campus for credit toward their degree.

EDFD 4333 Teaching Reading and Study Strategies in the Content Area
Prerequisite: Admission to Stage II of the teacher education program. This course is designed to provide pre-service and in-serve teachers and administrators with a knowledge of reading factors as they relate to various disciplines. The content of the course includes estimating the student's reading ability, techniques for vocabulary, questioning strategies, and developing reading-related study skills. May not be repeated for credit as EDFD 5333. Secondary education students may not complete the EDFD classes on the University Center campus for credit toward their degree.

Educational Media

EDMD 3032 Effective Use of Media in Elementary Education
A media methods course for teachers providing an introduction to: classroom computer utilization for instruction and classroom management; the selection, evaluation, and utilization of instructional materials; and the fundamentals of preparing teacher-made materials. Secondary education students may not complete the EDMD classes on the University Center campus for credit toward their degree.

EDMD 4033 Introduction to Instructional Technology
A media methods course for teachers providing an introduction to classroom computer utilization; applications of the principles of graphic design, visual literacy, communications and learning theory to the selection, evaluation and use of instructional materials, and a survey of production techniques for teacher-made materials. Includes basic production principles, operation of audiovisual equipment, and an introduction to computer-assisted instruction and computerized classroom management. May not be repeated for credit as EDMD 5033 or equivalent. Secondary education students may not complete the EDMD classes on the University Center campus for credit toward their degree.

Emergency Administration and Management

EAM 1003 Living in a Hazardous Environment
Overview of emergency management systems with an analysis of the causes, characteristics, nature and effects of such disasters as avalanches, drought, earthquakes, epidemics, fires, flooding, hazardous materials, hurricanes, industrial accidents, nuclear power plant accidents, power failures, volcanoes, and other catastrophic hazards. Required for major.

EAM 1013 Aim and Scope of Emergency Management
Analysis of disasters in historical settings and current situations. Areas covered include the role of local, state, and federal government, the unique problems of business/industry crisis management, disaster prevention and mitigation policy, technology support, and professionalism and litigation issues. Required for major.

EAM 1023 Disaster Planning
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. A study of pre-plan requirements, hazards and resource assessments, vulnerability analysis, methodology of planning, and public policy considerations.

EAM 2023 Principles and Practice of Disaster Response Operations and Management
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. A study of the steps necessary for implementing a disaster plan with consideration given to disaster warning systems, emergency center operations, and public health issues in large-scale disasters, dealing with the press and other communications issues, and utilizing local, state, and federal interfaces.

EAM 2033 Citizen/Family/Community Disaster Preparedness Education
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course covers the need for citizen disaster preparedness; research findings on the subject; program design models; team and coalition building, materials and approaches, effective presentation skills, overcoming disaster denial and apathy; preparedness with children, the elderly, and other high-risk populations.

EAM 2043 The Economics of Disaster
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course concentrates on the implications of disaster on state, regional, national, and international economies; case studies in false economies; economics of disaster modeling; and current issues in federal economic disaster policy.

EAM 3003 Developing Emergency Management Skills
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Topics covered in this course include: program planning and management, financial planning and management, managing information, managing people and time, personality types, leadership styles, followership styles, decision-making skills, team-building skills and group dynamics; community-building skills, intergovernmental relationships, negotiating skills, communications skills, emergency management ethics, and professionalism.

EAM 3013 Public Administration and Emergency Management
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course will analyze the role of public policy in relation to disaster planning issues, financial impact of disasters, disaster mitigation issues, land use planning, disaster recovery issue, legal and liability issues, management of large-scale disaster response/recovery, and disaster legislation.

EAM 3033 The Social Dimension of Disaster
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Overview of empirical vs. theoretical approaches; human behavior in disaster, myths and reality; group disaster behavior; community social systems and disaster; cultures, demographics and disaster behavior distinctions, and model-building in sociological disaster research.

EAM 3043 The Politics of Disaster
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course presents concepts and basic descriptive information about the political system within context of disaster policy including an overview of the executive and legislative political issues including the Federal Emergency Management Agency's organization and types of personnel.

EAM 4003 Principles and Practice of Disaster Relief and Recovery
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Recovery issues are studied and how they relate to ethical, medical, and economic and environmental considerations; initial, short-term, and long-term recovery efforts and group exercises; and documentation and record-keeping.

EAM 4013 Business and Industry Emergency Management
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course provides an analysis of the players involved; conjunction with governmental emergency management; legal requirements; employee disaster awareness and preparedness; disaster mitigation and response; business resumption considerations and public policy considerations and community outreach.

EAM 4023 Information Technology and Emergency Management
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course emphasizes the utilization of computer EM applications literacy, information requirements, acquisition, analysis, modeling, and data base management; decision support systems and computer EM software; networking; telecommunications; remote sensing technologies, and other emerging technologies related to EM applications.

EAM 4033 Emergency Management Research Methods/Analysis
Prerequisites: MATH 2163 or BUAD 2053 or SOC 2053; corequisites: EAM 1003 and 1013 or consent of instructor. The course covers the basic research methodology and statistical analysis required for managing a research/data base to be utilized for decision-making and policy development. Required for major.

EAM 4043 Disaster and Emergency Management Ethics
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course will involve a study of a variety types of ethical theory (teleological, deontological, distributive theories of justice, natural law), a review of specific ethical dilemmas per disaster phase, professional ethics, overcoming biases, avoiding discrimination, and developing sensitivity. Detailed ethical case studies will be conducted (Bhopal, Chernobyl, Three-Mile Island, Love Canal, Exxon Valdez).

EAM 4053 Community Management of Hazardous Materials
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. The course addresses chemical properties of hazardous materials and wastes; legal requirements for their handling, storage, transportation, and disposal; and methods for protecting employees, facilities, and the community.

EAM 4106 Practicum/internship
Arranged with advisor. Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Students will enroll in this course and pay the regular tuition and fees in order to obtain credit on their transcripts toward degree requirements. A portfolio will be required to document competencies attained.

EAM 4201-15 Externship
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Credit for experience and training will be awarded according to guidelines and competencies established by International Association of Emergency Managers and the Emergency Management Institute in conjunction with the American Council on Education's National Guide to Educational Credit for Training Programs. Students will enroll in this course, pay the regular tuition and fees, and complete and submit an assessment portfolio documenting experience and training in order to obtain credit on their transcripts toward degree requirements. Students may substitute 3000 or 4000 level technical specialty courses, core courses, or equivalent substitutions as recommended by the advisor and approved by the dean in lieu of having relevant training or certification.

EAM 4991-3 Special Problems and Topics
Prerequisites or corequisites: EAM 1003 and 1013 or consent of instructor. Open to Emergency Administration and Management junior and senior students only. The topics will vary to reflect the continual changes in the emergency management field. This course may also serve as an independent study course upon recommendation of the advisor and approval by the dean.

Engineering

ENGR 1002 Engineering Graphics
Corequisite: MATH 1113. General course in the most important types of engineering drawings. A foundation course in lettering, geometrical exercises, orthographic projections, including auxiliary views, sections, pictorial representation. The computer is introduced as a drafting tool. Lecture and laboratory four hours.

ENGR 1012 Introduction to Engineering
Prerequisites: high school trigonometry and ACT Math score of 24 or above, or MATH 1113, 1203. An introductory course to acquaint students with the technical and social aspects of engineering, the analytic approach to problem solving, measurements and calculations, including application of computer techniques. Lecture one hour, laboratory two hours.

ENGR 2013 Statics
Corequisites: MATH 2934 and PHYS 2114. Principles of statics, resultants, equilibrium, and analysis of force systems. Structure analysis, forces in space, friction, centroids, and moments of inertia. Lecture three hours.

ENGR 2023 Engineering Materials
Prerequisite: CHEM 2124. A study of the mechanical and physical properties, micro-structure, and the various testings of engineering materials (metals, plastics, woods, and concrete) from the viewpoint of manufacture and construction. Lecture three hours.

ENGR 2033 Dynamics
Prerequisites: ENGR 2013. Corequisite: MATH 3243. A continuation of ENGR 2013. Study of problems of unbalanced force systems. Kinematics and kinetics of rigid bodies. Work and energy, impulse and momentum. Lecture three hours.

ENGR 2103 Electric Circuits I
Corequisite: PHYS 2124 and MATH 3243; prerequisite: MATH 2924. An introduction to network theory and electrical devices. Topics include resistive circuits, dependent sources, analysis methods, network theorems, RC and RL circuits, and second order circuits. Lecture three hours.

ENGR 2111 Electric Circuits Laboratory
Corequisite: ENGR 2113. Report writing; use of basic electrical measurement devices; voltmeters, ammeters, R meters, wattmeters, and oscilloscopes. Computer modeling and data analysis of AC and DC circuits. Emphasis on developing laboratory techniques through experiments paralleling topics in ENGR 2103 and ENGR 2113. Laboratory three hours per week.

ENGR 2113 Electric Circuits II
Prerequisite: ENGR 2103. A continuation of ENGR 2103 covering phasor analysis, steady state power, complex network functions, frequency response, transformers, Laplace methods. Lecture three hours.

ENGR 2134 Digital Logic Design
Prerequisite: ENGR 1012 and COMS 2103. Binary numbers and codes, Boolean algebra, combinational and sequential logic, minimization techniques, memory systems, register transfers, control logic design, introduction to microcomputers. Lecture and laboratory four hours.

ENGR 3003 Engineering Modeling and Design
Prerequisites: COMS 2103 and MATH 3243. Corequisite: ENGR 3013. Formulation of engineering design objectives; reduction of engineering systems to mathematical models; methods of analysis using computers; interpretation of numerical results; optimization of design variables. Emphasis is placed upon practical design experience. Examples are drawn from various engineering disciplines. Lecture three hours.

ENGR 3013 Mechanics of Materials
Prerequisite: ENGR 2013. Fundamental stress and strain relationships, torsion, shear and bending moments, stresses and deflections in beams; introduction to statically indeterminate beams, columns, combined stresses, and safety factors. Lecture three hours.

ENGR 3103 (PHYS 3143) Electronics I
Prerequisite: ENGR 2113. Physics and electrical characteristics of diodes, bipolar transistors, and field effect transistors, behavior of these devices as circuit elements; common electronic circuits in discrete and integrated form; digital circuits including standard IC gates and flip-flops, linear circuits including standard discrete and integrated amplifier configurations and their characteristics. Lecture three hours.

ENGR 3123 Signals and Systems
Prerequisites: MATH 3243, ENGR 2113. Signal and system modeling, time and frequency domain analysis, singularity functions, the Dirac Delta function, impulse response, the superposition integral and convolution, Fourier series and Fourier and Laplace transformations. Lecture three hours.

ENGR 3131 Electronics Laboratory
Prerequisite: ENGR 2111. Co-requisite: ENGR 3103. Experiments paralleling ENGR 3103 emphasizing the applications and limitations of discrete electronic devices. Circuit modeling using "SPICE" and Electronic Workbench, applications of integrated circuits. Laboratory three hours per week.

ENGR 3133 Microprocessor Systems Design
Corequisite ENGR 3103; prerequisites: ENGR 2134, ENGR 2103 or consent. Digital design using microprocessors. Microcomputer architecture, memory structures, I/O interfaces, addressing models, interrupts, assembler programming, development tools. This course should also attract computer science students interested in hardware. Lecture three hours.

ENGR 3143 Electromagnetics
Corequisite: ENGR 3123. An introduction to static and dynamic electromagnetic fields using vector methods. Transmission lines, electrostatic fields, magnetostatic fields, Maxwell's equations, plane electromagnetic wave propagation, reflection, refraction, attenuation, long wire antennas, the short dipole, reciprocity, and gain. Lecture three hours.

ENGR 3151 Electrical Machines Laboratory
Prerequisite: ENGR 2111. Corequisite: ENGR 3153. This course parallels ENGR 3153 with experiments in single and polyphase transformers, direct current machines, synchronous machines and induction machines. Laboratory three hours per week.

ENGR 3153 Electrical Machines
Prerequisite: ENGR 2113. Steady-state analysis of single phase and polyphase transformers, direct current machines, synchronous machines, induction machines, and special purpose machines. Special emphasis will be given to the modeling and control of these machines. Lecture three hours.

ENGR 3223 Microcontrollers
Prerequisites: ENGR 2134, 2103. Corequisite: ENGR 3103. Digital design using microcontrollers. Microchip architecture, memory structures, I/O interfaces, addressing modes, interrupts, assembly language programming, development tools.

ENGR 3313 Thermodynamics I
Prerequisites: MATH 2924 and PHYS 2114. An introduction to thermodynamics, including thermodynamic properties of pure substances, heat and work, the first and second laws of thermodynamics, and entropy with applications to power and refrigeration cycles. Lecture three hours.

ENGR 3403 Machine Dynamics and Vibrations
Prerequisite: ENGR 2033 and MATH 3243. The study of the relative motion of machine components, force systems applied to these components, the motions resulting from these forces, and their effect on machine design criteria. Lecture 3 hours.

ENGR 3413 Fundamentals of Mechanical Design
Prerequisites: ENGR 2033 and 3013. Analysis of machines and components through application of basic fundamentals and principles. Lecture three hours.

ENGR 3442 Mechanical Laboratory I
Prerequisites: ENGR 2023. Corequisite: ENGR 3013. A study of the basic materials testing procedures and instrumentation. Emphasis will be placed on proper laboratory techniques including data collection, data reduction, and report preparation. Lecture one hour, laboratory three hours.

ENGR 3503 Basic Nuclear Engineering
Prerequisites: MATH 2924, CHEM 2124, and Corequisite PHYS 2114. An introduction to atomic and nuclear processes and to nuclear science and engineering fundamentals, including the nature of nuclear radiation, the nuclear chain reaction, criticality, power reactor types, and applications of nuclear technology. Lecture three hours.

ENGR 3512 Radiation Detection Laboratory
Prerequisite: MATH 2914 and CHEM 2124 or consent. A study of each of the common kinds of nuclear radiation, including the detection and analysis methods and applications to non-destructive assays. Use of computers in analyses. Lecture one hour, laboratory three hours.

ENGR 3523 (PHYS 3033) Radiation Health Physics
Upon demand. Prerequisites: MATH 2914, CHEM 2124, or consent. A study of the protection of individuals and population groups against the harmful effects of ionizing radiation. Included in the study is: (1) radiation detection and measurement, (2) relationships between exposure and biological damage, (3) radiation and the environment, (4) design criteria for processes, equipment, and facilities so that radiation exposure is minimized, and (5) environmental impact of nuclear power plants. Lecture three hours per week.

ENGR 4103 Electronics II
Prerequisite: ENGR 3103. A continuation of ENGR 3103 specializing in characteristics and applications of both linear and digital integrated circuits; amplifiers, feedback analysis, frequency response, oscillators, amplifier stabilization, microprocessors, memory systems, emphasis on design. Lecture three hours.

ENGR 4111 Digital Systems Laboratory
Prerequisite: ENGR 3131. Corequisite: ENGR 3133 or ENGR 3223. This laboratory addresses hardware implementation of systems studied in ENGR 2134 and ENGR 3133/3223. Digital circuits are designed and constructed using microprocessors, programmable logic devices, and other digital integrated circuits. Focus is on microprocessor hardware and interfacing. Laboratory three hours.

ENGR 4113 Digital Signal Processing
Prerequisites: ENGR 3123 and 3133 or ENGR 3223. The study of discrete-time signals and systems, convolution, correlation, z-transform, discrete-time Fourier transform, analysis and design of digital filters. Students write software for real-time implementation of selected signal processing algorithms using DSP microcomputer hardware. Lecture three hours.

ENGR 4133 Application-Specific Integrated Circuit Design
Prerequisites: ENGR 3103, ENGR 3133 or 3223. A project oriented course in which students develop and test custom digital integrated circuits (IC's). An overview of IC design systems and manufacturing processes is presented. Economics of IC production are discussed. Hardware Description Languages (HDL's) are studied. Students design and implement custom IC's using schematic-based entry and HDL's. Lecture one hour per week, project work two hours per week.

ENGR 4143 Communication Systems I
Prerequisites: ENGR 3123, MATH 3153. An introduction to design and analysis of analog and digital communication systems. Amplitude and angle modulation and demodulation, bandwidth, frequency division multiplexing, sampling and pulse-code modulation, detection error statistics in digital communication. Lecture three hours.

ENGR 4153 Communication Systems II
Prerequisite: ENGR 4143. Continuation of ENGR 4143. Design and analysis of analog and digital communication systems, taking into account the effects of noise. Random variables, random processes, analog and digital communication systems in the presence of noise. Optimum signal detection, channel capacity, error detecting and correcting codes. Lecture three hours.

ENGR 4193 Electrical Design Project
Prerequisites: ENGR 3003, 4103, 4202, senior standing and consent of instructor. An independent or group project in electrical engineering design. Where appropriate, a team approach will be employed. Emphasis will be placed on designing an electrical system or sub-system with due regard for: safety, environmental concerns, reliability, longevity, ease of manufacturing, maintainability, and cost effectiveness. A written and oral report are required.

ENGR 4202 Engineering Design
Prerequisite: Senior standing or consent of instructor. Corequisite: ENGR 3413 or ENGR 4103. This course serves as the first part of a two course sequence in which the student completes a senior design project. Design methodologies and tools including real world design considerations such as environmental impact, engineering ethics, economics, safety, product costing and liability are introduced. Design for manufacture, project management, scheduling and proposal writing will be covered. Successful completion of this course shall require completion of a proposal for a senior design project being accepted by the faculty design project review process.

ENGR 4303 Control Systems
Prerequisites: ENGR 3003 and ENGR 2113. The course will consist of the formulation of a variety of electrical, mechanical, thermal, and hydraulic control systems. Systems will be designed for particular steady state and transient responses. The Laplace Transform and Routh's stability criterion will be developed as design tools. In addition the course will acquaint the student with the following design tools: block diagrams, transfer functions, servo classifications, root locus techniques, the Nyquist criterion, compensation techniques. Lecture three hours.

ENGR 4314 Modern Control Systems
Prerequisites: ENGR 3003, ENGR 3123. The course will consist of the formulation of a variety of electrical and mechanical control systems. Systems will be designed for particular steady state and transient responses. The Laplace transform and Routh's stability criterion will be used as design tools. Both continuous and digital design techniques will be considered. State space methods, nonlinear methods, and modern control techniques (fuzzy, sliding, mode, etc.) will be included to verify theoretical results. Lecture three hours, lab two hours.

ENGR 4323 Power Plant Systems
Prerequisites: ENGR 3313, 4403 and consent. A study of the design and operation of steam-electric power plant components and systems. Fossil and renewable energy plants are emphasized. Lecture three hours.

ENGR 4403 Mechanics of Fluids and Hydraulics
Prerequisites: ENGR 2033 and ENGR 3313. A study of statics and dynamics of incompressible fluids. Major topics include the basic fluid flow concepts of continuity, energy and momentum, dimensional analysis, viscosity, laminar and turbulent flows, and flow in pipes. Lecture three hours.

ENGR 4413 Finite Element Analysis
Prerequisites: ENGR 2103, 3003, 3013. Introduction to approximate methods using finite elements. Development of the finite element method using variational formulations. Applications include machine design, mechanical vibrations, heat transfer, fluid flow and electromagnetics.

ENGR 4423 Machine Component Design
Prerequisite: ENGR 3403 and ENGR 3413. Design and analysis of specific machine components including gears, clutches, springs, and bearings. Lecture three hours.

ENGR 4433 Thermodynamics II
Prerequisites: MATH 2934, 3243 and ENGR 3313. A continuation of ENGR 3313. The study of thermodynamics is extended to the investigation of relations for simple substances, non-reacting mixtures, reacting mixtures, chemical reactions and a study of availability analysis. Power and refrigeration cycles are studied in more depth. Lecture three hours.

ENGR 4442 Mechanical Laboratory II
Prerequisites: ENGR 3442,ENGR 4403 and ENGR 4443. A study of fluid mechanics, thermodynamics, and heat transfer experimentation techniques. Laboratory projects will be assigned with student responsibility for procedure development and test program implementation. Formal laboratory reports will be required. Lecture one hour, laboratory three hours.

ENGR 4443 Heat Transfer
Prerequisites: ENGR 3313 and ENGR 4403 or consent. Basic thermal energy transport processes, conduction, convection, and radiation, and the mathematical analysis of systems involving these processes in steady-state and time-dependent cases. Lecture three hours.

ENGR 4463 Heating, Ventilating, and Air-Conditioning Design
Prerequisites: ENGR 3313, ENGR 4443, or permission of instructor. A study of the principles of human thermal comfort including applied psychometrics and air-conditioning processes. Fundamentals of analysis of heating and cooling loads and design of HVAC systems. Lecture 3 hours.

ENGR 4493 Mechanical Design Project
Prerequisite: ENGR 3003, 4202, senior standing and consent of instructor. Corequisite ENGR 4423. An independent or group project in mechanical engineering design. Where appropriate, a team approach will be employed. Emphasis will be placed on designing a mechanical system or sub-system with due regard for: safety, environmental concerns, reliability, longevity, ease of manufacturing, maintainability, and cost effectiveness. Both a written and oral report are required.

ENGR 4991-4 Special Problems in Engineering
Prerequisite: Minimum of three hours at the junior level in area of study. Individual study in advanced area of the student's choice under the direction of a faculty advisor.

ENGR 4503 Nuclear Power Plants I
Prerequisites: ENGR 3503, ENGR 4433. A study of the various types of nuclear reactor plants including the methods used for energy conservation. Relative advantages/disadvantages of various plant types investigated. Lecture three hours.

English

ENGL 0203 English as a Second Language
A course in basic English grammar, composition, reading, aural comprehension, and oral communication designed to prepare speakers of English as a second language for the six-hour, college-level composition sequence. The grade in this course will be computed in semester and cumulative grade point averages, but the course may not be used to satisfy general education requirements nor provide credit toward any degree. Students who are placed in ENGL 0203 must earn a grade of "C" or better in the course before enrolling in ENGL 1013. A student who makes a "D" or "F" in ENGL 0203 must repeat the course in each subsequent semester until he or she earns a grade of "C" or better.

ENGL 0303 Foundational Composition
A course in basic grammar and writing to prepare students for the required six-hour compositional sequence. The grade in the course will be computed in semester and cumulative grade point averages, but the course may not be used to satisfy general education requirements nor provide credit toward any degree. A student who is placed in ENGL 0303 must earn a grade of "C" or better in the course before enrolling in ENGL 1013. A student who makes a "D" or "F" in ENGL 0303 must repeat the course in each subsequent semester until he or she earns a grade of "C" or better.

ENGL 1013 Composition I
Prerequisite: Score of 19 or above on English section of the Enhanced ACT, 40 or above on the TSWE, 42 or above on the ASSET Language Usage test, or a grade of "C" or better in ENGL 0203 or 0303. A review of grammar, introduction to research methods, and practice in writing exposition using reading to provide ideas and patterns. May not be taken for credit after successful completion of ENGL 1043.

ENGL 1023 Composition II
Prerequisite: Minimum grade of "C" in ENGL 1013 or 1043. A continuation of ENGL 1013 with readings in poetry, fiction, and drama. May not be taken for credit after successful completion of ENGL 1053.

ENGL 1043 Honors Composition I
Prerequisite: Admission to the Tech Honors Program or permission of the Honors Program Director. An honors course that concentrates on advanced reading and writing skills. May not be taken for credit after successful completion of ENGL 1013.

ENGL 1053 Honors Composition II
Prerequisite: Successful completion of ENGL 1013 or ENGL 1043 and admission to the Tech Honors Program or permission of the Honors Program Director. An honors writing course that includes the study of poetry, fiction, and drama. May not be taken for credit after successful completion of ENGL 1023.

NOTE: A grade of "C" or better must be earned in each of the two composition courses used to satisfy the general education requirement of English/ Communication.

ENGL 2003 Introduction to World Literature
Prerequisite: ENGL 1013 or equivalent. An exploration of significant authors and themes in world literature. ENGL 2003 may be used to fulfill the general education humanities requirements.

ENGL 2013 Introduction to American Literature
Prerequisite: ENGL 1013 or equivalent. An exploration of significant authors and themes in American literature. ENGL 2013 may be used to fulfill the general education humanities requirement.

ENGL 2043 Creative Writing: Form and Theory
Prerequisite: ENGL 1023 or equivalent. Introduction to techniques of writing both fiction and poetry.

ENGL 2053 Technical Communication
Prerequisite: ENGL 1023 or equivalent. Practice in composing abstracts, instructions, visuals, proposals, questionnaires, letters, memos, and a variety of informal and formal reports.

ENGL (JOUR) 2173 Introduction to Film
Prerequisite ENGL 1013 or equivalent. A study of film as an art form with particular attention given to genres, stylistic technique and film's relation to popular culture. ENGL 2173 may be used to fulfill the General Education fine arts requirement. ENGL 2173 may not be repeated for credit after the completion of JOUR 2173.

ENGL 2183 Film as Literature
Prerequisite: ENGL 1013 or equivalent. A study of film as a literary form closely related to the novel. Students will watch film classics of the major genres and subject them to critical analysis and discussion.

ENGL 2213 Introduction to Drama
Prerequisite: ENGL 1013 or equivalent. A study of drama as literature; a study of terminology and elements of drama and the reading of selected works, including both classic and contemporary.

ENGL 2223 Introduction to Poetry
Prerequisite: ENGL 1013 or equivalent. A study of basic form, terminology and specific works.

ENGL 2263 Mythology
Prerequisite: ENGL 1013 or equivalent. An introduction to the Western mythologies and a study of their influence on Western literature.

ENGL 2283 Science Fiction and Fantasy
Prerequisite: ENGL 1013 or equivalent. A survey course which covers classics of the science fiction and fantasy genres. Approach to the works is both historical and thematic.

ENGL 2293 Themes in Literature
Prerequisite: ENGL 1013 or equivalent. A study of a significant theme in selected literary works. Course content will vary. May not be repeated for credit as ENGL 2293.

ENGL 2513 Methods of Research
Prerequisite: ENGL 1023 or equivalent. An introduction to techniques for research and writing.

ENGL 2881 Practicum-Literary Journal Publication
Prerequisite: ENGL 1013 or equivalent. Students will work as staff members of NEBO: A Literary Journal. May be repeated for a maximum of five semester hours. Cumulative hours in ENGL 2881 and ENGL 4881-4 may not exceed nine.

ENGL 3013 Systems of Grammar
Prerequisite: ENGL 3023, equivalent, or consent. A synthesis of the most useful elements of traditional, transformational, and structural grammar.

ENGL(FR, GER, SPAN, SPH) 3023 Introduction to Linguistics
Prerequisite: ENGL 1023 or equivalent. A study of basic concepts in language, comparative characteristics of different languages, and the principles of linguistic investigation.

ENGL 3043 Advanced Composition: Practice and Theory
Prerequisite: ENGL 1023 or equivalent. Mastery in writing several types of exposition.

ENGL 3083 Creative Writing Workshop: Fiction
Prerequisite: ENGL 2043. Concentration in the writing and evaluation of fiction.

ENGL 3093 Creative Writing Workshop: Poetry
Prerequisite: ENGL 2043. Concentration in the writing and evaluation of poetry.

ENGL 3203 Modern Novel
Prerequisite: ENGL 1023 or equivalent. Reading in representative novels since 1940.

ENGL 3213 Short Prose Fiction
Prerequisite: ENGL 1023 or equivalent. Study of the short story and the novella.

ENGL 3303 Literature of the South
Prerequisite: ENGL 1023 or equivalent. Reading in representative works by writers in the South since the Civil War.

ENGL 3313 American Literature to 1900
Prerequisite: ENGL 1023 or equivalent. Readings in the works of colonial and nineteenth-century American authors.

ENGL 3323 Modern American Literature
Prerequisite: ENGL 1023 or equivalent. Readings in the works of twentieth-century American authors.

ENGL 3413 British Literature to 1800
Prerequisite: ENGL 1023 or equivalent. Readings in the works of selected early British authors.

ENGL 3423 British Literature since 1800
Prerequisite: ENGL 1023 or equivalent. Readings in the works of nineteenth-and twentieth-century authors.

ENGL 4013 History of the English Language
Prerequisite: ENGL 3023, equivalent, or consent. The development of English sounds, inflections and vocabulary.

ENGL 4023 Second Language Acquisition
Prerequisite: ENGL 3013, equivalent, or permission of the instructor. An investigation and analysis of the theoretical foundations of learning a second language as a guide to the effective teaching of English to limited English proficiency (LEP) students.

ENGL 4053 Seminar in Technical Communication
Prerequisite: ENGL 2053 or consent. Course content will vary. May be repeated for credit as ENGL 4053 if course content differs.

ENGL 4083 Seminar: English Language
Prerequisite: ENGL 2513, equivalent, or consent. Course content will vary. May be repeated for credit as ENGL 4083 or ENGL 5083 if course content differs.

ENGL 4093 Seminar: Creative Writing
Prerequisite:. ENGL 3083, 3093, or consent. Students refine style and techniques in their chosen genre with the purpose of producing polished, publishable stories and poems.

ENGL 4213 American Folklore
Prerequisite: ENGL 2513, equivalent, or consent. A study of the forms and subjects of American folklore, folklore scholarship and bibliography; field work in collecting folklore. May not be repeated for credit as ENGL 5213.

ENGL 4233 Literary Criticism
Prerequisite: ENGL 2513, equivalent, or consent. Classical criticism through modern. May not be repeated for credit as ENGL 5233.

ENGL(TH) 4263 Theatre History I
Prerequisite: ENGL 2513, equivalent, or consent. A historical survey of the development of drama and theater from classical Greece through the sixteenth century.

ENGL(TH) 4273 Theatre History II
Prerequisite: ENGL 2513, equivalent, or consent. A historical survey of the development of drama and theatre from the seventeenth century through the nineteenth century.

ENGL 4283 Seminar: World Literature
Prerequisite: ENGL 2513, equivalent, or consent. Course content will vary. May be repeated for credit as ENGL 4283 or ENGL 5283 if course content differs.

ENGL 4383 Seminar: American Literature
Prerequisite: ENGL 2513, equivalent, or consent. Course content will vary. May be repeated for credit as ENGL 4383 or ENGL 5383 if course content differs.

ENGL 4443 Early British Novel
Prerequisite: ENGL 2513, equivalent, or consent. Reading in representative British novels of the eighteenth and nineteenth centuries. May not be repeated for credit as ENGL 5443.

ENGL 4453 Chaucer
Prerequisite: ENGL 2513, equivalent, or consent. Reading in representative works. May not be repeated for credit as ENGL 5453.

ENGL 4463 Shakespeare
Prerequisite: ENGL 2513, equivalent, or consent. Reading selected comedies, histories, tragedies. May not be repeated for credit as ENGL 5463.

ENGL 4483 Seminar: British Literature
Prerequisite: ENGL 2513, equivalent, or consent. Course content will vary. May be repeated for credit as ENGL 4483 or ENGL 5483 if course content differs.

ENGL 4683 Seminar In Women's Studies
Prerequisite: ENGL 2513, equivalent, or consent. Course content will vary. May be repeated for credit as ENGL 4683 or ENGL 5683 if course content differs.

ENGL 4703 Teaching English as a Second Language
Prerequisite: ENGL 2513, equivalent, or consent. An investigation and practice in teaching different levels of English grammar, oral communication, comprehension skills, reading, and composition to foreign students.

ENGL 4713 ESL Assessment
Prerequisite: ENGL 2513, equivalent, or consent. An introduction to the tools, techniques, and procedures for evaluating the English proficiency and language development of ESL students.

ENGL 4723 Teaching People of Other Cultures
Prerequisite: ENGL 2513, equivalent, or consent. An examination of cultural diversity in Arkansas and the United States, designed for prospective ESL teachers.

ENGL 4733 Teaching English in the Secondary School
Prerequisite: Admission to Stage II of the teacher education program. To be taken within one year before student teaching. An introduction to methods and materials used to teach secondary English.

ENGL 4881-4 Practicum-Editing Literary Journal
Prerequisite: ENGL 3083, 3093, or consent. To select and edit writing for publication and to direct staff members in the production of NEBO: A Literary Journal. Candidates for editorial positions must apply to the English Department at the start of the spring semester. May be repeated for a maximum of six semester hours. Cumulative hours in ENGL 2881 and ENGL 4881-4 may not exceed nine.

ENGL 4991-4 Special Problems in English
Prerequisite: English major or minor and consent of instructor and department head. Course content and credit are designed to meet the needs of the student.

Finance

FIN 2013 Personal Finance
Prerequisites: sophomore standing. A course designed to provide students with the fundamental skills of personal financial planning and goal achievement. Topics covered include financial planning, cash and credit management, insurance, investment, and retirement and estate planning.

FIN 3043 Investments I
This course provides the fundamental concepts of the investment area including markets, stocks and bonds, investment environments, economic, industry and security analysis, and portfolio concepts. May not be taken for credit after successful completion of ECON 3043.

FIN 3063 Business Finance
Prerequisite or corequisite: BUAD 2053. Nature of business finance and its relation to economics, accounting, and law; role of the financial manager and financial markets; financial forecasting, planning, and budgeting; securities valuation, capital budgeting, and cost of capital; capital structure and working capital management; international finance. May not be taken for credit after successful completion of ECON 3063.

FIN 4023 Investments II
Prerequisite: FIN 3043 (ECON 3043). This course provides further work with investment concepts involving derivative securities, specialized investment products, international investing, real estate, insurance products, construction of a portfolio, and work with computerized investment software. May not be taken for credit after successful completion of ECON 4023.

FIN 4043 Principles of Risk and Insurance
Prerequisite: FIN 3063 (ECON 3063). A course designed to provide an understanding of the insurance field. Course content includes a survey of the extent and types of risk in business; ways of dealing with business risk; and a survey of insurance for risk-bearing purposes. May not be taken for credit after successful completion of ECON 4043.

Fisheries and Wildlife Biology

FW 1001 Orientation to Fisheries and Wildlife Science
An introduction to professions in fisheries and wildlife science. Required of fisheries and wildlife students during their first fall term on the Tech campus. Lecture one hour.

FW 2003 Elements of Fish and Wildlife Management
Principles of fish and wildlife management for the non-major, including fish and wildlife identification and the role of various natural resource-organizations in conservation. Lecture three hours.

FW 3001 Junior Seminar in Fisheries and Wildlife Biology
Fall semester. Restricted to junior fisheries and wildlife biology majors or by consent of instructor. Instruction and practice in methods for scientific presentation and resume preparation. Assessment of career goals. Lecture one hour.

FW 3024 Forest Ecology
Fall. Prerequisite: FW(BIOL) 3114. An in-depth coverage of ecological interactions in forested ecosystems. Lectures cover biotic and abiotic factors that influence development and species compositions of forest stands. Wildlife habitat relationships in forested ecosystems will also be discussed. Laboratories will familiarize students with field techniques and management activities important in the major forest types of Arkansas. Lecture two hours, lab four hours. $10 laboratory fee.

FW 3074 Habitat Evaluation
Spring. Introduction to aquatic and terrestrial habitat mensuration and evaluation for field biologists, with emphasis on the description and demonstration of evaluation procedures and software. Lecture two hours, laboratory four hours. $10 laboratory fee.

FW(BIOL) 3084 Ichthyology
Fall. Prerequisite: BIOL 1124. Systematics, collection, identification, natural history, and importance of fishes. Lecture two hours, laboratory four hours. $10 laboratory fee.

FW(BIOL) 3114 Principles of Ecology
Each semester. Prerequisites: BIOL 1124, 1134, and one semester of chemistry. Responses of organisms to environmental variables, bioenergetics, population dynamics, community interactions, ecosystem structure and function, and major biogeographical patterns. Lecture two hours, laboratory four hours. $10 laboratory fee.

FW(BIOL) 3144 Ornithology
Spring. Prerequisite: BIOL 1124. An introduction to the biology of birds. The course covers aspects of anatomy, physiology, behavior, natural history, evolution, and conservation of birds. Laboratories address field identification and natural history of the birds of Arkansas. Students will be expected to participate in an extended 5-7day field trip. Lecture two hours, lab four hours. $10 laboratory fee.

FW(BIOL) 3154 Mammalogy
Fall. Prerequisite: BIOL 1124. Taxonomy identification, ecology, natural historyand study of the mammals. Lecture three hours, laboratory two hours. $10 laboratory fee.

FW(BIOL) 3163 Biodiversity and Conservation Biology
Spring. Prerequisites: FW(BIOL) 3114 and an animal or plant taxonomy course, or permission of instructor. The concepts of, processes that produce, and factors that threaten biological diversity are introduced and examined. Further emphasis is placed on unique problems associated with small population size, management of endangered species, aspects and importance of the human dimension, and practical applications of conservation biology. Lecture three hours.

FW 3204 Aquaculture
Spring. Prerequisite: BIOL 1124 or permission of instructor. Course is designed to provide students with the essentials of successful warmwater aquaculture including crayfish and alligators. Basics of cool and coldwater aquaculture are also covered. Emphasis ranges from maintenance of brood stock and culture of fingerlings to production of market-size fish. Lecture three hours, laboratory two hours plus several full-day field trips that may involve weekend or overnight travel. $10 laboratory fee.

FW 4001 Senior Seminar in Fisheries and Wildlife Biology
Spring semester. Restricted to senior fisheries and wildlife biology majors or by consent of instructor. Designed to integrate various aspects of fisheries and wildlife biology by covering current topics and to acquaint students with areas not covered elsewhere in the curriculum. Lecture one hour.

FW 4003 Principles of Wildlife Management
Spring. Prerequisite: FW(BIOL) 3114 or permission of instructor. Principles of managing wildlife resources with emphasis on the history of wildlife resources in the United States, population ecology, wildlife values, and the administration of wildlife resources and resources agencies. Lecture three hours.

FW 4013 Wildlife Techniques
Fall. Prerequisites: FW(BIOL) 3114 or permission of instructor. Instruction in current wildlife techniques including habitat evaluation and manipulation, estimation of wildlife abundance, capturing and marking, identification and aging. Course is structured around a research project that requires use of popular wildlife techniques. Lecture one hour, laboratory four hours. $10 laboratory fee.

FW(BIOL) 4024 Limnology
Spring. Prerequisite: FW(BIOL) 3114. A study of physical and chemical processes in fresh water and their effects on organisms in lakes and streams. Laboratory sessions and field trips demonstrate limnological instrumentation and methodology. Lecture two hours, laboratory four hours. $10 laboratory fee.

FW 4034 Geographic Information Systems in Natural Resources
Spring. Prerequisites: PSY 2053 or MATH 2163 and Computer Science elective or GEOG 4833. Use of GIS technology in wildlife and fisheries management and research. Emphasis placed on creation, maintenance, and analysis of spatially explicit data. Two hours lecture, four hours lab. $10 laboratory fee.

FW 4043 Fisheries Techniques
Fall. Prerequisites: FW(BIOL) 3114 and a computer science elective, or permission of instructor. The techniques and practices of warmwater fish management. Major emphasis will be placed on survey techniques, data collection, and data analysis techniques. Lecture one hour, laboratory four hours. $10 laboratory fee.

FW 4053 Fish and Wildlife Administration
Fall. Prerequisites: FW 4003 or 4083, or permission of instructor. The course will familiarize the student with the administration of fish and wildlife agencies, including organizational designs and policies, planning, directing, budgeting, personnel management, and public relations. Special consideration will be given to public, scientific, and economic considerations in the decision-making process. Lecture three hours.

FW 4083 Principles of Fisheries Management
Fall. Prerequisites: FW(BIOL) 3114, one semester of statistics, and one semester of calculus, or permission of instructor. The principles and theory of warmwater fish management with major emphasis on the human dimension in fisheries management, fishery assessment, population dynamics, and common management practices. Lecture three hours.

FW 4116 Internship
Each semester, Prerequisites: Consent of program director. Placement in selected agency settings in student-trainee status under professional guidance of both agency supervisor and faculty. Emphasis will be placed on application of classroom theory to agency requirements which fulfill student's individual career interest. No prior experience credit will be granted. Minimum of 400 clock hours of supervision and written report required.

FW 4991-4 Directed Research in Fisheries and Wildlife Management
Each semester. Open to fisheries and wildlife majors with approval of department head and individual instructor who will advise on research topic. Research may vary to fit needs and interests of the student. Unless permission is granted by the department head, no more than two credit hours will be given in any semester for a particular research topic.

French

FR 1014 Beginning French I
Training in the elements of French communication and comprehension. Four hours of applied class work. Laboratory work by arrangement. Advanced placement and credit by examination are available to students who have previously studied French.

FR 1024 Beginning French II
Prerequisite: FR 1014 or equivalent. Training in basic French communication and comprehension skills to satisfy minimum survival needs in French-speaking countries. Four hours of applied class work. Laboratory work by arrangement.

FR 2014 Intermediate French I
Prerequisite: FR 1024 or equivalent. Development of the skills necessary to understand and communicate in everyday situations in French-speaking countries. Four hours of applied class work. Laboratory work by arrangement.

FR 2024 Intermediate French II
Prerequisite: FR 2014 or equivalent. Further development of the skills necessary to understand and communicate in everyday situations in French-speaking countries. Four hours of applied class work. Laboratory work by arrangement.

FR 3003 Conversation and Composition I
Prerequisite: FR 2024 or equivalent. Development of advanced control of French communication and comprehension through the study of French-language media (radio broadcasts, television newscasts and commercials, prose texts, periodical articles) and through classroom debates and simulations. Laboratory work by arrangement.

FR 3013 Conversation and Composition II
Prerequisite: FR 3003 or equivalent. Continuation of FR 3003.

FR(ENGL, GER, SPAN, SPH) 3023 Introduction to Linguistics
Prerequisite: ENGL 1023 and FR 2024 or equivalent. A study of basic concepts in language, comparative characteristics of different languages, and the principles of linguistic investigation.

FR 3113 Culture and Civilization
Prerequisite: FR 2024 or equivalent. Development of an understanding of French life through study and analysis of French history and geography texts, film, advertising, and mass media.

FR 4213 French Literature to 1800
Prerequisite: FR 2024 or equivalent. Careful study of selected French texts to introduce students to various literary genres and general literary trends.

FR 4223 French Literature since 1800
Prerequisite: FR 2024 or equivalent. A study of representative texts from the period for understanding of genres, styles, and language.

FR 4283 Seminar in French
Prerequisite: FR 3013. Course content will vary. May be repeated for credit if course content varies.

FR(GER, LAT, SPAN) 4703 Foreign Language Teaching Methods
Prerequisites: FR 3013 and 3113 or equivalent; admission to Stage II of the Secondary Education sequence or equivalent. Survey of instructional methods with discussions and demonstrations of practical techniques for the teaching of foreign language.

FR 4801 Cultural Immersion and Research
Prerequisite: Enrollment in French Immersion Weekend and permission of instructor. Intensive study of French cultural topics followed by individual research projects. May be repeated for credit if content varies.

FR(GER, JPN, SPAN) 4901-3 Foreign Language Internship
Prerequisites: Advanced foreign language proficiency; permission of the instructor and the department head. The Foreign Language Internship is intended primarily for majors in foreign languages or international studies. It is designed to provide outstanding students the opportunity to perfect their language proficiency and to acquire specific training and skills overseas. The overseas sponsor and the foreign language instructor of record will supervise the intern. Performance evaluations and a research paper will be required.

FR 4991-4 Special Problems in French
Prerequisite: FR 2024 and consent of the instructor and the department head. Designed to provide advanced students with a course of study in an area not covered by departmental course offerings.

Geography

GEOG 2013 Regional Geography of the World
A survey of major regions with particular emphasis upon Europe, the Commonwealth of Independent States, the Orient, the Mid-East, Africa, and Latin America.

GEOG 2033 Physical Geography
A description and interpretation of the physical features of the surface zone of the earth and how man interrelates with this complex natural environment.

GEOG 3113 Geography of the United States and Canada
A regional study emphasizing the physical and cultural aspects of Anglo-America.

GEOG 3303 Geography of Latin America
A regional study of the lands and people of Latin America and their interrelationships. Particular attention will be given to Mexico, Brazil, and Argentina.

GEOG 3413 Geography of Europe
A regional study of the physical and cultural aspects of Europe (including the C.I.S.) and their interrelationships.

GEOG 3703 Geography of Asia
A regional study of the lands and peoples of Asia and their interrelationships with particular emphasis on India, China, and Japan.

GEOG 4023 Economic Geography
A study of the resources at man's disposal and his economic activities in utilizing these resources. Special attention is given to industrial and agricultural resources of leading nations. May not be taken for credit after completion of GEOG 3023 nor repeated for credit as GEOG 5023 or equivalent.

GEOG 4803 Seminar in Global Studies
A directed seminar in a major world region. The region and specific focus will depend upon the current world situation and student needs. May not be taken for credit after completion of GEOG 6803 nor repeated for credit as GEOG 5803 or equivalent.

GEOG 4833 Geographic Information Systems
Prerequisite: COMS 2003, or permission of the instructor. An introductory course dealing with computer organized spatial and attribute data. GIS is a system of specialized computer programs with the capability to manipulate and analyze data for problem solving.

GEOG 4991-4 Special Problems in Geography
A course for minors only. Admission requires consent of department head.

Geology

GEOL 1004 Essentials of Earth Science
An introduction to the fundamental topics of earth science including physical and historical geology, oceanography, and meteorology. Laboratory exercises include the study of minerals, rocks, fossils, topographic and geologic maps, and oceanographic and meteorological phenomena. Laboratory work will stress the use of the scientific method of problem solving. Lecture three hours, laboratory three hours. $10 laboratory fee. Duplicate credit for GEOL 1004 and GEOL 1014 will not be allowed. Elementary education majors who take both the GEOL 1004 and GEOL 1014 will receive credit for GEOL 1004 only. All other majors who take both GEOL 1004 and GEOL 1014 will receive credit for only GEOL 1014 unless student has selected option (b) for completing the science area of the General Education requirements.

GEOL 1014 Physical Geology
Each semester. A survey of the earth's features and forces which modify its surface and interior. Laboratory exercises include the study of minerals, rocks, and landforms through the use of topographic maps and aerial photography. Lecture three hours, laboratory three hours. $10 laboratory fee. Duplicate credit for GEOL 1014 and GEOL 1004 will not be allowed. Elementary education majors who take both the GEOL 1014 and GEOL 1004 will receive credit for GEOL 1004 only. All other majors who take both GEOL 1004 and GEOL 1014 will receive credit for only GEOL 1014 unless student has selected option (b) for completing the science area of the General Education requirements.

GEOL 2001 Seminar
(See GEOL 3001.)

GEOL 2024 Historical Geology
Spring. Prerequisite: GEOL 1014. A survey of the physical and biological history of the earth. Laboratory exercises include the study of fossils, geologic maps, and cross-sections. Lecture three hours, laboratory three hours. $10 laboratory fee.

GEOL(BIOL, CHEM) 2111 Environmental Seminar
(See GEOL 4111).

GEOL 3001 Seminar
Fall. Prerequisites: GEOL 1014 and 2001. Participants will prepare oral and written reports and participate in discussions of the reports. Topics for the seminar will be determined by the instructors but will be subjects which are beyond the scope of other geology courses.

GEOL 3004 Structural Geology
Fall. Prerequisites: GEOL 1014, 2024, and MATH 1203 or 1913. A study and analysis of the structural features of the earth's crust. Lecture three hours, laboratory two hours. $10 laboratory fee.

GEOL 3014 Mineralogy
Fall. Prerequisites: GEOL 1014, 2024; CHEM 1114 or 2124. A study of crystallography, physical and chemical properties, origin, occurrence, and structure theory of minerals. Lecture two hours, laboratory four hours. $10 laboratory fee.

GEOL 3023 Geologic Field Techniques
Fall. Prerequisites: GEOL 1014, 2024 and 3004. Interpretation of aerial photographs; mensuration techniques using the Brunton compass, hand level, and Jacob's staff, measurement and description of stratigraphic sections; construction of and geologic maps; collecting, sampling, and collation procedures. Lecture-laboratory four hours. $10 laboratory fee.

GEOL 3044 Geomorphology
Fall. Prerequisites: GEOL 1014, 2024, 3004, and 3164. A study of land forms and the processes which shape the earth's surface. Special emphasis will be placed on slope-forming and fluival processes. Lecture three hours, laboratory three hours. $10 laboratory fee.

GEOL 3053 Geology of Energy and Metallic Resources
Upon demand. Prerequisites: GEOL 1014, 3014, and 3164. A study of the principal earth materials essential to local and national economies. Location, genesis, methods of extraction, and primary utilization and conservation are emphasized. Lecture three hours.

GEOL 3083 Hydrogeology
Prerequisites: MATH 1113 and GEOL 1014 or permission of the instructor. The earth's hydrologic system is studied in terms of both empirical and quantitative aspects of the steady-state condition of groundwater and its interaction with surface water, as well as transient behavior from the influence of wells. Basic water chemistry is also covered along with transport and fate of pollutants in groundwater. Lecture 3 hours.

GEOL(BIOL, CHEM) 3111 Environmental Seminar
(See GEOL 4111.)

GEOL 3124 Invertebrate Paleontology
Spring. Prerequisite: GEOL 2024. A systematic study of invertebrate fossils and their geologic significance. Lecture-laboratory six hours. $10 laboratory fee.

GEOL 3153 Environmental Geology
Prerequisite: GEOL 1014. A study of the geological factors which influence the pollution of land, water, and biological resources; the role of rock and soil in the geobiological community; hydrology; land-sliding and faulting in the human environment, natural resource problems; urban and land-use planning based on geological data. Lecture three hours.

GEOL 3164 Petrology
Spring. Prerequisite: GEOL 3014. A study of the classification, origin, geologic occurrence, physical and chemical properties of igneous, sedimentary, and metamorphic rocks. Lecture three hours, laboratory three hours. $10 laboratory fee.

GEOL 4001 Seminar
(See GEOL 3001).

GEOL 4006 Field Geology
Each summer by arrangement. Prerequisites: GEOL 1014, 2024, 3004, 3014, 3023, 3124, and 3164. A six-week course of instruction in the use of geologic mapping instruments, interpretation of aerial photographs and their use in the construction of geologic maps, development of techniques necessary in geologic field work, and recognition and interpretation of geologic phenomena. $10 laboratory fee. The course is offered in cooperation with the University of Arkansas and will be taught in the Dillon, Montana region. The fee for room and board is approximately $900; cost of tuition and transportation is not included in this amount.

GEOL 4013 Optical Mineralogy
On demand. Prerequisites: PHYS 2024, GEOL 3014, 3164. A study of minerals in thin sections with the petrographic microscope. Lecture-laboratory four hours. $10 laboratory fee.

GEOL 4023 Principles of Stratigraphy and Sedimentation
Spring. Prerequisites: GEOL 3124 and 3164. A study of sedimentary rocks and their stratigraphic relationships. Lecture three hours.

GEOL 4034 Subsurface Geology
Upon demand. Prerequisites: GEOL 3004, 3164, 4023, MATH 1113, PHYS 2014, 2024. A study of analytic procedures in selected topics in geophysics, well-logging, and subsurface geological relationships. Lecture three hours, laboratory two hours. $10 laboratory fee.

GEOL(BIOL, CHEM) 4111 Environmental Seminar
Spring. A seminar for students pursuing the environmental option of geology, biology, or chemistry and other students interested in environmental sciences.

GEOL 4991-2 Special Problems in Geology
Upon demand. Open to geology majors with the approval of the department head.

German

GER 1014 Beginning German I
Introduction to conversation, basic grammar, reading, and writing. Four hours of classroom instruction. Advanced placement and credit by examination are available to students who have previously studied German.

GER 1024 Beginning German II
Continued instruction in grammar and fundamental language skills. Four hours of classroom instruction.

GER 2014 Intermediate German I
Prerequisite: GER 1024 or equivalent. Instruction designed to develop greater facility in fundamental skills and more extensive knowledge of grammar. Four hours of classroom instruction.

GER 2024 Intermediate German II
Instruction intended to complete the survey of the basic grammar of the language and to provide the mastery of fundamental skills essential for enrollment in upper-level German courses. Four hours of classroom instruction.

GER 3003 Conversation and Composition I
Prerequisite: GER 2024 or equivalent. Further study of German based on analysis of short texts (newspaper articles, short stories, plays, poetry). Students are expected to use German in oral and written expression.

GER 3013 Conversation and Composition II
Prerequisite: GER 3003 or equivalent, Continuation of GER 3003.

GER(ENGL, FR, SPAN, SPH) 3023 Introduction to Linguistics
Prerequisites: ENGL 1023 and GER 2024 or equivalent. A study of basic concepts in language, comparative characteristics of different languages, and the principles of linguistic investigation.

GER 3113 Culture and Civilization
Prerequisite: GER 2024 or equivalent. Study of the geography, history, arts, institutions, customs, and contemporary life of the German-speaking peoples.

GER 4213 German Literature to 1832
Prerequisite: GER 2024 or equivalent. A survey of major writers and representative works from early Middle Ages through the Age of Goethe.

GER 4223 German Literature since 1832
Prerequisite: GER 2024 or equivalent. A survey of major writers and representative works since the Age of Goethe.

GER 4283 Seminar in German
Prerequisite: GER 2024 or equivalent. Course content will vary. May be repeated for credit if course content varies.

GER (FR, SPAN) 4703 Foreign Language Teaching Methods
Prerequisites: GER 3013 and GER 3113 or equivalent; admission to Stage II of the Secondary Education sequence or equivalent. Survey of instructional methods with discussions and demonstrations of practical techniques for teaching of foreign language.

GER(FR, JPN, SPAN) 4901-3 Foreign Language Internship
Prerequisites: Advanced foreign language proficiency; permission of the instructor and the department head. The Foreign Language Internship is intended primarily for majors in foreign languages or international studies. It is designed to provide outstanding students the opportunity to perfect their language proficiency and to acquire specific training and skills overseas. The overseas sponsor and the foreign language instructor of record will supervise the intern. Performance evaluations and a research paper will be required.

GER 4991-4 Special Problems in German
Prerequisite: GER 2024 and consent of the instructor and the department head. Designed to provide advanced students with a course of study in an area not covered by departmental course offerings.

Gifted Education

GTED 4003 Understanding the Gifted in Home, School, and Community
Prerequisite: Consent of instructor. GTED 5003 may not be taken for credit after completion of GTED 4003 or GTED 6833. A survey in gifted education providing basic knowledge and concepts of interest to parents, prospective teachers, and the community at large.

Greek

GRK 1013 Beginning Classical Greek I
Instruction in the fundamentals necessary to read and write classical Greek.

GRK 1023 Beginning Classical Greek II
A continuation of GRK 1013.

GRK 2013 Intermediate Classical Greek I
Prerequisite: GRK 1023 or equivalent. A study designed to continue the development of fundamental skills and to give a general reading knowledge of classical Greek and acquaintance with classical Greek literature, history, and philosophy.

GRK 2023 Intermediate Classical Greek II
A continuation of GRK 2013 which concentrates on the works of Homer, Plato, Herodotus, and selected Attic dramatists.

GRK(LAT) 3001 Greek and Latin Scientific Terminology
The course is designed to assist students with their understanding of English words which have their roots in Greek or Latin. Students who in their course of study need to know specialized vocabulary, such as science, math, pre-med, pre-law and nursing majors, will find this course extremely helpful.

Health Education

HLED 1513 Personal Health and Wellness
Each semester. The course is designed to motivate students toward an individual responsibility for their health status and an improved quality of life. An introspective study of personal lifestyle behavior is encouraged. The interrelationship of the multi-causal factors which directly affect health status and the various dimensions of personal health are addressed.

HLED 3203 Consumer Health Programs
A study of current health services and the products offered by health providers to the health consumer and an examination of various diseases and disorders.

HLED 4303 Methods and Materials in Health for Grades K-12
Exploration of teaching methods and strategies, use of school and community resources, and evaluation related to teaching health in grades K-12.

HLED 4403 Nutrition and Physical Fitness
Spring. Prerequisite: PE 2653. A health education course which is designed to familiarize students with food as it relates to optimal health and performance. Focus is on nutrition as it affects the physical-work capacity of humans from resting states to high output performance.

HLED 4991-3 Special Problems in Health
Independent work on approved health topics under the individual guidance of a faculty member. Admission requires consent of department head.

Health Information Management

HIM 1002 Health Information Management Orientation
Fall. An introductory course with emphasis on the basics of health information management as related to career choices, giving the student a better understanding of opportunities in the field. The course will also focus on helping the student develop good study skills, career goals, and understand policies and information needed for a successful college career.

HIM 2003 Fundamentals of Medical Transcription
Fall. Prerequisites: AHS 2013, BUAD 1001, BUAD 2002, and COMS 1003. Introduction to the healthcare record and medical documents. Transcription of basic medical dictation, incorporating English usage and machine transcription skills, medical knowledge, and proofreading and editing skills, and meeting progressively demanding accuracy and productivity standards.

HIM 3003 Advanced Medical Transcription
Spring. Prerequisites: HIM 2003 and AHS 2013. Transcription of advanced original medical dictation, using advanced proofreading and editing skills, while meeting progressively demanding accuracy and productivity standards. Introduction to Joint Commission on Accreditation of Healthcare Organization (JCAHO) standards for the healthcare record.

HIM 3024 Introduction to Health Information Management
Fall. Prerequisite: Admission to the HIM Program. A study of the history of health records, professional ethics, the functions of a health information department, retention of records, medical forms, health information practices, and responsibilities to healthcare administration, medical staff, and other medical professionals.

HIM 3033 Basic Coding Principles
Fall. Prerequisite: BIOL 2004, AHS 2013, or permission of instructor. An in-depth study of the principles of disease and procedural coding using the ICD-9-CM classification system. Areas emphasized during the course include: the purpose of coding, the definition of key terms, accurate application of coding principles, methods to assure quality data, and a review of the impact of prospective reimbursement on the function of coding.

HIM 3043 Advanced Concepts in Health Information
Fall. Prerequisite: HIM 3024. A study of such advanced concepts as quality improvement, utilization review, licensure and accreditation standards, medical staff, and interdisciplinary relationships.

HIM 3132 Health Data and Statistics
Spring. Prerequisite: HIM 3024. A study of the methods of recording diagnoses and operations by recognized systems of disease, procedural and pathological nomenclatures and classification systems, manual and computerized systems of indexing and abstracting, research and statistical techniques, and health information data handling.

HIM 3133 Alternative Health Records
Spring. Prerequisite: HIM 3024. A study of health record requirements in non-traditional settings such as cancer programs, ambulatory care facilities, mental-health centers, and long-term care facilities. May not be taken for credit after completion of HIM 3131.

HIM 3142 Healthcare Registries
Spring. A junior-level course intended to explore the many different healthcare registries that exist, with special attention to cancer registry programs. This course will also orient the student to the information and skills needed to abstract cancer cases using the ICD-0-2 coding system, Registries Operations and Data Standards (ROADS) manual, and CPDMS software, as well as stage cancers using the AJCC Cancer Staging Manual and the SEER Summary Staging Guide.

HIM 4033 Advanced Coding Principles
Spring. Prerequisite: HIM 3033. A continuation of HIM 3033, dealing with advanced principles of coding using ICD-9-CM and CPT-4. Experience with coding of health records as well as DRG grouping and the administrative aspects of coding will be emphasized. May not be taken for credit after completion of HIM 4032.

HIM 4063 Organization and Administration
Fall. Prerequisites: HIM 3024 and senior standing. A study of the application of the principles of organization, administration, supervision, human relations, work methods, and organizational patterns in the health information department. The duties and relationships of the health information manager and the social forces affecting the department and current trends in hospital and medical care are investigated.

HIM 4073 Legal Concepts for the Health Fields
Spring. Prerequisites: HIM 3024 and senior standing, or permission of instructor. A study of the principles of law as applied to the health field. Consideration is given to the importance of health records as legal documents as well as a general introduction to the law, administration of the law, legal aspects of healthcare facility and medical staff organization, release of information, confidential communication and consents and authorizations.

HIM 4083 Health Organization Trends
Spring. Prerequisites: HIM 3024 and senior standing, or permission of instructor. A comprehensive review of the trends and changes in the healthcare field. Historical aspects of healthcare organization and governmental health agencies are reviewed. Emphasis is placed on current events in the healthcare arena.

HIM 4092 Research in Health Information Management
Spring. Prerequisites: HIM 3024 and senior standing. A study of the specific research methodology used in a health information management setting. Emphasis will be given to hands-on performance of research in conjunction with area health care facilities and agencies. Formal presentation of research will also be a component of the course.

HIM 4153 Principles of Disease
Spring. Prerequisites: AHS 2013 and BIOL 2004, or permission of instructor. An introduction to medical science, including the etiology, treatment and prognosis of various diseases. Emphasis is given to the medical information as viewed from the standpoint of a health information management professional.

HIM 4182 Directed Practice I
Fall. Prerequisites: HIM 3024, HIM 3043, HIM 3133, HIM 3132 and HIM 3033. Active participation within an actual health information management department providing a supervised learning experience through which the student develops insight, understanding, and skills in health information procedures, accepts responsibilities and recognizes the need for confidentiality.

HIM 4292 Directed Practice II
Spring. Prerequisites: HIM 4182. A supervised learning experience through which the student learns to recognize the contribution of and learns to work with other professional and non-professional personnel, learns to recognize and deal with personnel problems in a health information department.

HIM 4892 Seminar in Health Information
First summer term. Corequisite: HIM 4895. A seminar, utilizing the case method approach, on problem situations encountered in the field of health information management. This course includes discussion of problems that arise during their affiliation experience.

HIM 4895 Affiliation
First summer term. Prerequisites: Successful completion of all required HIM courses except HIM 4892. Provides the student with management experience in the activities and responsibilities of the health information management professional. Augments theoretical instruction received during previous courses. Student is actively involved in the management process while under direct supervision of a qualified health information management professional. Although every effort is made to secure a convenient locale, the student must assume full financial responsibility for this assignment.

HIM 4983 Systems Analysis for Health Information Management
Fall. Prerequisites: HIM 3024 and senior standing, COMS 1003, COMS 2003. A course designed to provide a detailed study of the relationship between health information management departments and computerized information systems. Students will learn from a variety of projects related directly to the clinical setting.

HIM 4991-4 Special Problems in Health Information Management
Open to health information management senior students only. The problems will vary to fit the needs of the student and reflect the continual changes in the allied health field.

History

HIST 1503 World Civilization I
The political, economic, and social development of man from the earliest times to the modern period. May not be taken for credit after completion of HIST 1403.

HIST 1513 World Civilization II
Continuation of HIST 1503. May not be taken for credit after completion of HIST 1413.

HIST 2003 US History to 1865
A study of the development of the American nation with emphasis upon the winning of independence, the origin of the Constitution, the rise of Jeffersonian Democracy European influence upon America, Jacksonian Democracy, westward expansion, the emergence of sectionalism, and the Civil War.

HIST 2013 US History since 1865
The history of the development of the American nation since the Civil War, with particular attention to the essentials for understanding the problems confronting America today.

HIST 3013 Colonial America
The European background, the settlement of British colonies, the development of provincial institutions, and the emergence of an American civilization in the seventeenth and eighteenth centuries.

HIST 3023 The Era of the American Revolution
The deterioration of empire relationships from 1763 to 1776, with an examination of the causes and consequences of the American Revolution and the post-war problems leading to the establishment of a new government under the constitution in 1789.

HIST 3033 The Age of Jefferson and Jackson, 1789-1840
The social, cultural, economic, and political climate in which Jeffersonian-Jacksonian democracy developed.

HIST 3043 Civil War and Reconstruction
The rounding out of the continental United States; social, political, economic, and intellectual backgrounds of the war; the military operations; analysis of Reconstruction.

HIST 3063 Industrialization and Protest–The United States: 1877-1914
Explores the major issues associated with Gilded Age America (i.e., immigration, industrialization, urbanization, imperialism, rise or organized labor) and examines the origins, goals, and legacies of the Populist and Progressive reform movements. May not be taken for credit after completion of HIST 3053.

HIST 3073 The Ascent to World Power–The United States: 1914-1945
Examines the American entry and contribution in World War One, and the post-war settlement, the various social, economic, and political trends of the 1920s, the Great Depression, the New Deal, American foreign policy in the inter-war era, the American role in World War Two, and its effects on American society and culture.

HIST 3083 The United States: 1945-Present
Explores the origins of–and American responses to–the Cold War, the rise of various reform movements in the 1950s-60s, the New Frontier and Great Society programs, the Vietnam War, and the rise of the New Right. May not be taken for credit after completion of HIST 4003.

HIST 3103 The Old South, 1607- 1865
A survey of the political, social, and economic development of the American South from the founding of Jamestown through the Civil War.

HIST 3123 The New South, 1865 to the present
A survey of the political, social, and economic development of the American South from the end of the Civil War to the present.

HIST 3133 American Political Ideas
The background and development of American political ideas. Emphasis on the Colonial period, the Revolution, the Constitutional period, Jeffersonian Democracy, Jacksonian Democracy, slavery controversy, nature of the union, and recent tendencies.

HIST 3353 History of Latin America
A history of the peoples, institutions, traditions, and culture of Latin America, stressing economic, social, and political relations with the United States and Europe.

HIST 3413 History of Classical Greece and Rome
The origins and development of Classical civilization in ancient Greece, the rise of the Roman Republic, and the ascendancy and decline of the Roman Empire.

HIST 3423 History of the Middle Ages, 300-1300
Decline of the ancient Roman civilization; rise, ascendancy, and decline of medieval civilization; emphasis upon the Christian church and the rise of national monarchies.

HIST 3433 Era of the Renaissance and Reformation, 1300-1648
A study of the political, cultural, and economic developments in Western Europe, with particular emphasis on the conflicting values as reflected in the presence of humanism, materialism, idealism, and spiritualism in the period.

HIST 3443 History of Early Modern Europe, 1648-1763
A study of the political, economic, and religious conflicts of early modern Europe; rise of the territorial states; the Ages of Enlightenment and Reason.

HIST 3453 The Era of the French Revolution and Napoleon, 1763-1815
A study of the new ideas and forces in Europe which caused the French Revolution; the events and consequences of the Revolution, including the establishment and demise of the French imperium in Europe.

HIST 4013 American Military History
A study of the American military from its colonial origins to the present, including the development of the military establishment and its relationship with American society. May not be taken for credit after completion of MS 2022 prior to 1983-84 or repeated for credit as HIST 5013 or equivalent.

HIST 4023 Vietnam War
A study of the American involvement in Vietnam, from 1945 until 1975. Emphasis will rest on the actual period of war in Vietnam. May not be taken for credit after completion of the equivalent course under HIST/POLS 4983 nor be repeated for credit as HIST 5023.

HIST 4033 The American West
Study of the American frontier as a place, as a process, and as a state of mind influential in shaping institutions and attitudes during the expansion of this nation westward from Atlantic to Pacific. May not be repeated for credit as HIST 5033 or equivalent.

HIST(POLS) 4043 American Constitutional Development to 1941
Development and application of the great constitutional principles by the Supreme Court in the evolution of American government as seen in the leading cases dealing with judicial review, separation of powers, and federal system; protection of personal rights, interstate commerce, taxation, and due process of law in economic regulation and control.

HIST 4053 Economic History of the United States
A study of the major economic forces which have helped influence, and been influenced by, United States history. Particular emphasis will be given to the development of agriculture, business, industry, and labor in their American setting. May not be repeated for credit as HIST 5053 or equivalent.

HIST 4093 American Diplomatic History
A study of our past and present relations with other nations, with attention to changes brought about in international affairs by the evolving economic and political conditions.

HIST(POLS) 4113 Racial and Cultural Minorities in American History
A study of the role of racial and cultural minorities in America and the interrelationship of these minorities with American society from Colonial times to the present with emphasis on Native Americans, African Americans, and Mexican Americans. May not be repeated for credit as HIST 5113 or equivalent.

HIST 4153 History of Arkansas
A study of the history of the state from Indian times to the present, noting political, social, economic, and cultural trends. May not be taken for credit after completion of HIST 3153 nor repeated for credit as HIST 5153 or equivalent.

HIST 4203 Women in American Social History
A treatment of women in Western and American social history in their lifestyles and economic and family roles. May not be taken for credit after completion of HIST 3203 nor repeated for credit as HIST 5203 or equivalent.

HIST 4433 Europe in the Nineteenth Century, 1815-1914
Political, economic, and cultural history of Europe with emphasis on imperialism in Africa and Asia; wars of the last century, and causes of World War I.

HIST 4443 Europe in the Twentieth Century
European history from World War I to the present, with emphasis on the great wars; depression; revolution, the rise of Fascism, Communism, and economic and political nationalism; the League of Nations and the United Nations. May not be repeated for credit as HIST 5443 or equivalent.

HIST 4463 History of Russia
A study of the cultural and political history of Russia from the reign of Peter the Great to the present, emphasizing trends in the nineteenth century which culminated in the Bolshevik Revolution. May not be repeated for credit as HIST 5463 or equivalent.

HIST 4473 Constitutional and Political History of England to 1689 AD
A survey of the political, legal, and constitutional development of England, with particular emphasis on England's development in relation to that of Western Europe in general. May not be taken for credit after completion of HIST 3483 nor repeated for credit as HIST 5473 or equivalent.

HIST 4483 Economic History of Europe
A study of the structure and evolution of European economic development with emphasis on agriculture, trade, industrial production, and business organization. May not be repeated for credit as HIST 5483 or equivalent.

HIST 4493 Modern Britain, 1689 to the Present
A study of the cultural, political, and constitutional history of England in the modern era, with a consideration of the influence of England upon the institutions of her colonies and of the role of England in the economic development of the Western World. May not be taken for credit after completion of HIST 3493 nor repeated for credit as HIST 5493 or equivalent.

HIST 4603 The Modern Far East
This course deals primarily with the history of Asia after 1800. The major stress is placed upon the history of China, India, and Japan.

HIST 4703 History of Modern Africa
A treatment of African history since 1600, dealing with the development of African states in sub-Saharan Africa up to present African nations. May not be repeated for credit as HIST 5703 or equivalent.

HIST 4713 Social Studies Methods for Secondary Teachers
A course in subject-matter applications for secondary teacher education candidates (grades 7-12) in social studies. The course will incorporate a variety of instructional models, activities, and examples, as well as the integration of traditional and non-traditional resource materials. Must be completed prior to student teaching.

HIST 4813 World War II
A study of World War II, 1939 through 1945, in its origins and spread through world theaters. May not be taken for credit after completion of the equivalent course under HIST/POLS 4983 nor repeated for credit as HIST 5813.

HIST 4883 Historiography
Study of major U.S. or European interpretations and interpreters of history with emphasis on how historical judgement affects our concepts of the past, beliefs in the present, and hopes for the future. May not be taken for credit after completion of HIST 4493/5493 or repeated for credit as HIST 5883 equivalent.

HIST 4963 Senior Seminar
A required course for senior History and Political Science majors. Course content will cover a directed seminar in specified American or European History. Research techniques will be emphasized.

HIST(POLS) 4981-3 Social Sciences Seminar
A directed seminar in an area of social sciences. The specific focus will depend upon research under way, community or student need, and the unique educational opportunity available. May be repeated for credit if course content changes.

HIST 4991-4 Special Problems in History
A course for majors and minors only. Admission requires consent by department head.

University Honors

HONR 1001 Freshman Honors Seminar
Prerequisite: Acceptance into the honors program, approval of Honors Program Director. An introductory course to the honors program, college survival skills, teamwork and multidisciplinary problem solving.

HONR 4093 Senior Honors Project
Prerequisites: Approval of the Director of Honors Program (if used for departmental requirement, all applicable prerequisites also apply). A team or individual independent research project will be completed. Projects will include some aspect of academic investigation appropriate to the subject area chosen. Written and oral presentation of project findings will be required.

Hospitality Administration

HA(RP) 1001 Orientation to Parks, Recreation, and Hospitality Administration
Orientation to the Parks, Recreation and Hospitality professions. An overview of the career opportunities in various Park, Recreation and Hospitality agencies and industries. Weekly speakers from PRHA agencies, industry and education will provide information on current issues in their professional areas of expertise.

HA 1013 Sanitation Safety
A survey of the food service industry to include its history, various food service systems, organization and operations, and franchising. Emphasizes the aspects of sanitation. Upon passing exam, results in certification from the Educational Foundation of the National Restaurant Association.

HA 1043 Introduction to Hospitality Management
The history and development of the hospitality industry which comprises food, lodging, and tourism management, an introduction to management principles and concepts used in the service industry, and career opportunities in the field.

HA 2043 Lodging Operations
A survey of the lodging industry to include its history, growth and development, and future direction. Emphasis on front office procedures and interpersonal dynamics from reservations through the night audit. Successful completion of standardized exam results in certification from the Educational Foundation of the National Restaurant Association.

HA 2813 Basic Human Nutrition in Hospitality Administration
Study of the relationship between nutrition and health as a basis for food choices of all ages; the application of nutrient functions in human life processes and cycles; how balanced eating promotes healthy lifestyles. Current concepts and controversies are highlighted. Successful completion of standardized exam results in certification from the National Restaurant Association. Web-based course.

HA 2913 Principles of Food Preparations
Prerequisites: HA 1013 and HA 2813. Focus of the principles, techniques and theories of food preparation emphasizing nutritional content, proper use and selection of equipment, while stressing sanitation quality controls, and guest accommodations that focus on food production. 2 hours lecture and 3 hours laboratory. $50 laboratory fee required.

HA 3023 Travel and Tourism
Course recounts the history of travel, explores the future, and discusses the components of tourism. Examines the economic, social, and political impact of tourism as well as methods of forecasting. Focus on the importance of the planner, travel agent, and travel-market researcher to the hospitality industry. Web-based course.

HA(RP) 3043 Work Experience I
Fall, Spring or Summer. By permission. Supervised field application of class skills and knowledge in Parks, Recreation and Hospitality work situations. Students are given the opportunity to take part in meaningful management and work experiences in actual work situations under the supervision of both university faculty and professionals in the field. Minimum of 80 clock hours of work experience. Lecture one hour, laboratory four hours.

HA 3063 Dining Service Management
Prerequisite: HA 2913. Analysis and development of dining service management skills including leadership behavior, motivation, communication, training, staffing, etiquette, and professional service. Lecture two hours, lab three hours.

HA 3073 Hospitality Financial Analysis
Prerequisites: ACCT 2003 and 2013, HA major. Accounting principles and procedures for the Hospitality Industry as an aid in management planning, decision making and control, financial statements, statement analysis, flow of funds, cash analysis, accounting concepts, cost accounting budgets, capital expenditures, and pricing decisions. Upon passing exam, results in certification from the Educational Institute of the American Hotel and Motel Association.

HA(RP) 4001 Internship Preparation
Prerequisites: PRHA major, senior standing, two semesters prior to internship, and completion of RP/HA 3043 (if required for major) or permission of department head. Preparation for the internship experience.

HA 4013 Hospitality Marketing and Sales
The organization of the marketing function and its role and responsibility in developing an integrated marketing program. Special attention to the conduct of the "sales blitz," convention sales and management, and the role of travel-related services to the marketing function.

HA 4023 Hospitality Facilities Management and Design
Prerequisites: Junior standing plus nine hours of HA courses or by permission. The fundamental principles of facilities planning, facilities management, and maintenance for all segments of the hospitality industry. Application principles in the preparation of a typical layout and design. Upon passing exam, results in certification from the Educational Institute of the American Hotel and Motel Association.

HA 4033 Legal Aspects of Hostpitality Administration
Prerequisites: Senior standing or permission of instructor and BUAD 2033. Solving practical management problems through planning, establishment of policy, analysis, and the application of accounting and quantitative methods. Cases and computer simulations from the core of the course.

HA 4043 Menu Analysis and Purchasing
Prerequisites: HA 2913, 3073 4074, and COMS 2003. Basic principles of purchasing food, beverage, and non-food items, with particular attention to product identification and to the receiving, storing and issuing sequence. Menu development and design. Successful completion of standardized exam results in certification from the Educational Institute of the American Hotel and Motel Association.

HA 4053 Meetings and Conventions Management
Prerequisites: Junior standing plus nine hours of HA courses or by permission. Planning and managing meetings and conventions in the hospitality industry.

HA 4063 Beverage Management
Prerequisite: 21 years of age, HA major or permission of the instructor. Selection, storage, and service of beverages with emphasis on controls, merchandising, pricing, history, social and legal concerns. Successful completion of standardized exam results in certification in C.A.R.E. (Controlling Alcohol Risks Effectively) from the Educational Institute of the American Hotel and Motel Association and in Beverage Management from the Educational Foundation of the National Restaurant Foundation. Lecture two hours, lab two hours. $25.00 Lab fee required.

HA 4074 Quantity Food Production
Prerequisites: HA 2913 and HA 4043. Standards, techniques and practices that include organizing, purchasing, costing, preparing and serving of food in a quantity food production setting. Menu development and marketing applications are utilized in laboratory. 2 hours lecture and 4 hour laboratory. $50 laboratory fee required.

HA(RP) 4093 Resort Management
Prerequisites: Junior standing and nine hours of RP or HA courses or by permission. An in-depth study of resorts with respect to their planning, development, organization, management, marketing, visitor characteristics, and environmental consequences. Passing exam results in certification from the Educational Institute of the American Hotel and Motel Association.

HA(RP) 4113 Personnel Management in Parks, Recreation, and Hospitality Administration
Prerequisites: Junior standing and nine hours of RP or HA courses. An overview of personnel considerations in various Recreation and Park agencies and the Hospitality industry. Laws, legal issues, structure, staffing, motivation, training, conduct, policies and other aspects of agency/industry personnel relations will be examined using case-studies, as well as other methods. Upon passing exam, results in certification from the Educational Institute of the American Hotel and Motel Association.

HA(RP) 4116 Internship
Each semester. Parks, Recreation, and Hospitality Administration majors only. Prerequisites: Senior standing and consent of department head. Placement in selected agency settings in student-trainee status under professional guidance of both agency supervisor and faculty. Emphasis will be placed on application of classroom theory to agency requirements which fulfill student's individual career interest. No prior experience credit will be granted. Minimum of 600 clock hours (15 weeks) of supervision and written report required.

HA(RP) 4991-3 Special Problems and Topics
On demand. Investigative studies and special problems and topics related to hospitality administration.

Industrial Electronic Technology

TELT 1014 Fundamentals of Electricity I
This course (along with Fundamentals II) is a program cornerstone presenting the concepts of electricity and magnetism. AC and DC currents and voltages are explained. Ohm's law and the power equation are used to analyze series, parallel, and series-parallel resistive circuits. Fundamental theorems are used in the analysis of resistor networks. The student becomes acquainted with the use of basic electrical instruments. Reactive circuit components are introduced.

TELT 1123 Industrial Electricity I
Prerequisites: TELT 1014. This course is a study of the fundamentals of motors and motor control. The subject matter includes switches, relays, transformers, three-phase power systems, DC motors, single-phase motors, three-phase motors, overload protection, and motor controllers. The National electrical Code standards for all circuits are emphasized. Lecture 2 hours. Laboratory 2 hours.

TELT 1214 Fundamentals of Electricity II
Prerequisite: TELT 1014. This course is a continuation of TELT1014, Fundamentals of Electricity I. It is a study of various combinations of resistors, capacitors, and inductors into circuits that contain both resistance and reactance. The simulation and analysis of these circuits deepens the understanding of basic electrical concepts. Students will work with test instruments and circuit components in the laboratory. Lecture 2 hours. Laboratory 4 hours.

TELT 1224 Solid State I
Prerequisite: TELT 1214. Semiconductor theory will explain the P.N. junction and its application in transistors and diodes. The principles of DC power supplies, amplifiers, and oscillators will be studied, ending with the application of field effect transistors. Lecture 2 hours. Laboratory 4 hours.

TELT 1314 Digital Electronics I
Prerequisites: TELT 1224. This course will provide the basic understanding of digital circuitry. Boolean algebra and digital circuits will be stressed. These principles will be applied to understanding the concepts of microprocessors. Lecture 2 hours. Laboratory 4 hours.

TELT 2014 Programmable Logic Controllers (PLC) Applications
Prerequisite: TELT 2313. This course provides the student with an overview of the selection, programming, operation, and capabilities/limitations of programmable logic controllers. Application examples presented will define design requirements for input/output cards, memory requirements, scan time, update time, documentation, data highway/host computer interface, etc. Lecture 3 hours. Laboratory 2 hours.

TELT 2214 Solid State II
Prerequisite: TELT 1224. This course covers advanced electronic circuit analysis and troubleshooting. Positive and negative feedback circuits are covered including oscillators, operational amplifiers, tuned amplifiers, Class A, B, and C amplifiers. Lecture 2 hours. Laboratory 4 hours.

TELT 2223 Troubleshooting Electrical and Electronic Systems
Prerequisites: TELT 2214. This course covers a wide range of electronic power supplies, from basic rectifiers to complex switch-mode, highly regulated supplies as used in televisions and computers. Lecture 2 hours. Laboratory 2 hours.

TELT 2233 Advanced PLC Systems
Prerequisite: TELT 2014. This course should provide the student with the comprehensive procedures needed to design and program a PLC System. Design and installation specifications will be examined to provide the student with a first experience in implementing process control systems. Hardware and software selection, as well as, Man to Machine Interface (MMI) will also be discussed. An emphasis will be given to advanced ladder logic programming techniques. Practical programming applications will be provided through laboratory activities. Lecture 1 hour. Laboratory 4 hours.

TELT 2313 Industrial Electricity II
Prerequisites: TELT 1123. This course covers industrial applications of electronics. Subjects studied include relay ladder logic and troubleshooting, SCRs, Triacs, UJTs, polyphase rectifiers, AC/DC motor speed control, inverters, and advanced control systems. Lecture 2 hours. Laboratory 2 hours.

TELT 2424 Digital Electronics II
Prerequisites: TELT 1314. The basic principles of microprocessors–architecture, instruction set, arithmetic and logical operations, read-only and read/write memory, machine and assembly language programming, and interfacing will be studied with the aid of a microprocessor trainer. The principles will be applied to other industry-standard microprocessors. Lecture 2 hours. Laboratory 4 hours.

TELT 2503 Electronics: Special Topics
Prerequisites TELT 1014, 1214, 1314. This course is designed to provide special instruction on new and emerging topics in electronics that are not otherwise covered in this curriculum. Topics for this course will be determined by the industry, the technology and the equipment to which the students are exposed. This instruction is designed to provide the student with the knowledge and skills to diagnose and repair complex equipment malfunctions. Lecture 2 hours. Laboratory 2 hours.

Industrial Plant Maintenance

TACR 2014 Introduction to Air Conditioning Systems
This course is designed to teach the principles of the basic refrigeration cycle, including temperature-pressure relationships, evaporation, condensation, heat transfer, and refrigerants. The identification and use of hand tools, as well as safety principles and practices will be taught. Practical application is provided through laboratory activities. Lecture 2 hours. Laboratory 4 hours.

TACR 2114 Ammonia Refrigeration Systems
This course is designed to teach the components, operations, and design characteristics of commercial ammonia refrigeration systems. Applications of these principles combined with practical experience on actual commercial equipment should provide the student with the knowledge and skills to diagnose and repair normal equipment malfunctions. Lecture 2 hours. Laboratory 4 hours.

TACR 2212 Maintenance of Boiler and Steam Systems
Prerequisites: TACR 2213 or current Boiler License. This course is designed to teach the maintenance and safe operation of boiler and steam systems. Students will study water treatment, pressurized vessels, boiler operation safety skills, troubleshooting techniques, and preventative maintenance guidelines. Application of these skills as well as experience on actual equipment should provide the student with knowledge and skills to diagnose and repair equipment malfunctions. Lecture 1 hour. Laboratory 2 hours.

TACR 2213 Introduction to Boiler and Steam Generation
This course is designed to teach the components, operation, and design characteristics of steam generation systems. Upon completion of this course, students will possess the knowledge needed to sit for the Arkansas Boiler License Exam. Students will gain experience on actual industrial equipment. Lecture 2 hours. Laboratory 2 hours.

TDFT 1013 Blueprint Reading for Machine Trades
This course is designed to develop basic skills in reading blueprints and introduces the student to various types of working drawings for engineering and manufacturing purposes. Emphasis is placed on understanding basic concepts of orthographic projection an the ability to visualize objects.

TIPM 1103 Hydraulics and Pneumatics
This course is a study of the basic industrial fluid power systems common to the field of automation, including basic principles, components, standards, symbols, circuits, and troubleshooting of hydraulic and pneumatic systems. Lecture 3 hours.

TIPM 1204 Maintenance of Plumbing Systems
This course is designed to provide special instruction in the process of identifying tubing and piping with practical applications in sizing and fitting to different configurations using mechanical fittings, soft soldering, silver brazing and aluminum soldering. The course also provides the student with the knowledge and skills to diagnose and repair commercial plumbing systems. Lecture 2 hours. Laboratory 4 hours.

TIPM 2014 Metallurgy
Metallurgy is a study of the chemical and mechanical properties of metals. The microstructure of the metal is determined by metallography techniques, and the properties are verified by physical testing. Alloying and heat treatment of steels are discussed in detail. Lecture 3 hours. Laboratory 2 hours.

TMAC 1013 Basic Machine Shop
This course covers the use of hand tools, drills, lathe cutting tools, and tapers, and study the methods of machining them. Instructions are given in the care and operation of basic machine tools, measuring instruments, and shop safety procedures. Shop projects are designed to provide practice in accurate turning, knurling, threading, and other operation on the lathe. Lecture 2 hours. Laboratory 2 hours.

TMAC 1025 Machine Set-Up and Operation I
Prerequisites or corequisite: TMAC 1013. This course covers the ser-up and operation of drilling machines, milling machines and grinders. Students learn abrasives, precision part layout and inspection, drilling, tapping, reaming and boring, as well as the care and used of precision measuring instruments. Lecture 3 hours. Laboratory 4 hours.

TMAC 1135 Welding Option
This course is comprised of in-depth study and practice of the gas tungsten arc welding process. The student's experience begins with the development of manipulative skills through the media of oxyacetylene welding, then progresses to similar applications with TIG welds in the standard positions. Joint designs are mastered on carbon steel, aluminum, and stainless steel. Lecture 2 hours. Laboratory 6 hours.

TMAC 2014 Machine Set-Up and Operations II
Prerequisite or corequisite: TMAC 1025. In this course students begin to work independently as expected by a machine shop employee. The basic knowledge and skills learned in previous courses are applied by working from blueprints and specifications in construction of machine shop projects. Lecture 2 hours. Laboratory 4 hours.

TMAC 2115 Machine Processes
Prerequisite or corequisite: TMAC 2014. This course provides instruction and practice in special layout and machine set-up using the rotary table, indexing features, sine plates, and other specialized work-holding devices an machine fixtures. Lecture 2 hours. Laboratory 6 hours.

TMAC 2503 Mechanical: Special Topics
Prerequisite TMAC 2115. This course is designed to provide special instructions on new and emerging topics in mechanical technology that are not otherwise covered in this curriculum. Topics for this course will be determined by the industry, the technology and the equipment to which the students are exposed. This instruction is designed to provide the student with the knowledge and skills to diagnose and repair complex mechanical malfunctions. Lecture 2 hours. Laboratory 2 hours.

TMAT 1003 Technical Mathematics
Prerequisite: MATH 0903 or required placement score. Designed for students in occupational and technical programs, this course includes measurement, operations with polynomial expressions, use of equations and formulas, systems of linear equations, basic geometry, basic trigonometry, and basic statistics, with emphasis on industrial and other practical applications. This course requires a calculator capable of doing arithmetic with fractions.

Italian

ITAL 1014 Beginning Italian I
Emphasis on conversation; introduction to basic grammar, reading, writing, and culture.

ITAL 1024 Beginning Italian II
Continued emphasis on conversation and fundamental language skills.

ITAL 2014 Intermediate Italian I
Prerequisite: Beginning Italian II (ITAL 1024) or equivalent. Instruction designed to develop communication skills and knowledge of grammar, reading, writing, and culture.

ITAL 2024 Intermediate Italian II
Prerequisite: Intermediate Italian I (ITAL 2014) or equivalent. Instruction designed to enhance communication skills and knowledge of grammar, reading, writing, and culture.

Japanese

JPN 1014 Beginning Japanese I
No prerequisite. Introduction to the oral and written forms of the Japanese language.

JPN 1024 Beginning Japanese II
Prerequisite: JPN 1014 or equivalent. A continuation of JPN 1014.

JPN 2014 Intermediate Japanese I
Prerequisite: JPN 1014 or equivalent. Instruction designed to develop greater facility in fundamental skills. Four hours of classroom instruction.

JPN 2024 Intermediate Japanese II
Prerequisite: JPN 2014 or equivalent. A continuation of JPN 2014. Four hours of classroom instruction.

JPN 3003 Conversation and Composition I
Prerequisite: JPN 2024 or equivalent. Further study of Japanese. concentrating on grammar, reading, comprehension, essays, conversation, and kanji.

JPN 3113 Culture and Civilization
Prerequisite: JPN 2024 or equivalent. Study of the economic, political, and social structure of Japan and an introduction to Japanese history and culture.

JPN 4283 Seminar: Japanese Language and Culture
Prerequisite: JPN 3003 or equivalent. Specialized studies in Japanese literature, art, or social customs.

JPN(FR, GER, SPAN) 4901-3 Foreign Language Internship
Prerequisites: Advanced foreign language proficiency; permission of the instructor and the department head. The Foreign Language Internship is intended primarily for majors in foreign languages or international studies. It is designed to provide outstanding students the opportunity to perfect their language proficiency and to acquire specific training and skills overseas. The overseas sponsor and the foreign language instructor of record will supervise the intern. Performance evaluations and a research paper will be required.

Journalism

JOUR(ART) 1163 Basic Photography
A study of the use of the camera, films, equipment, and the basics of black and white processing and printing. Includes introduction to lighting techniques, composition, and color photography.

JOUR 1811-1821 Broadcast Practicum
Practical work experience in the studios of KXRJ-FM and Tech television productions. Only four hours count for the journalism major.

JOUR 2133 Introduction to Mass Communication
An introduction to the mass communication process and industry.

JOUR 2143 News Writing
A study of and practice in writing news stories.

JOUR 2153 Introduction to Radio and Television
A study of the technical, legal, programming, advertising and journalistic aspects of broadcasting with practical exercises in writing and announcing.

JOUR (ENGL) 2173 Introduction to Film
Prerequisite: ENGL 1013 or equivalent. A study of film as an art form with particular attention to genres, stylistic technique and film's relation to popular culture. JOUR 2173 may be used to fulfill the fine arts General Education requirement. JOUR 2173 may not be repeated for credit after the completion of ENGL 2173.

JOUR 2811-2821 Broadcast Practicum
Practical work experience in the studios of KXRJ-FM and Tech television productions. Only four hours count for the journalism major.

JOUR 3111-3121 Editorial Conference
Prerequisite: Permission of instructor. Student news executives meet regularly with faculty to critique publication and broadcast products.

JOUR 3114 News Editing
Prerequisite: JOUR 2143, 3143. A study of copy reading, headline writing, makeup, and problems and policies of editing the news. Three hours lecture, two hours laboratory arranged.

JOUR 3133 Publications Management
An analysis of the problems in managing newspapers, magazines and other mass media.

JOUR 3143 News Reporting
Prerequisite: ENGL 1013 or 1043. A study of news gathering and writing techniques.

JOUR 3153 Feature Writing
Prerequisite: Permission of the instructor. A study of and practice in writing of newspaper features and magazine articles.

JOUR 3163 News Photography
Prerequisite: ENGL 1013 or 1043. A study of the use of the camera, communication through pictures, news value in pictures, and the history of photojournalism.

JOUR 3173 Public Relations Principles
A study of public opinion and the role of the mass media in shaping it, including practice in public opinion research, communications techniques and solving public relations problems.

JOUR 3183 Broadcast News Writing
Prerequisite: JOUR 2143 or 3143. Principles and techniques of writing and production of radio and television news. Two hour class, two hour laboratory.

JOUR 3193 Television News Production
Prerequisite: JOUR 2143 or 3143 or consent of instructor. Study and practice in directing and producing television news programs, including experience in announcing, preparing scripts and video tape, and operating cameras and other studio equipment. One hour lecture, three hours laboratory.

JOUR 3811-3821 Broadcast Practicum
Practical work experience in the studios of KXRJ-FM and Tech television productions, including work as manager, producer, or director. Only four hours count for the journalism major

JOUR 4011-3 Practical Editing
Actual experience editing news. Arranged with an instructor. May be taken for a maximum of three hours.

JOUR 4033 Community Journalism
A study of journalism as practiced in weeklies, small dailies, and broadcast stations in small towns and cities, including the relationship of the media to the community. For majors and non-majors.

JOUR 4053 Mass Communication Seminar
Prerequisite: Permission of instructor. Studies of the relationship of mass communication to social, political, technical, and economic issues. Course content will vary. May be repeated for credit as JOUR 4053 or 5053 when course content changes.

JOUR 4083 New Communication Technology
A study of and practice in the use of the developing technology in mass communication, including the social, legal, and economic effects.

JOUR 4091-4 Internship
Credit for work in professional journalistic settings. Credit hours will be based on hours on the job. May be taken for a total of four hours.

JOUR 4111-4121 Editorial Conference
Prerequisite: Permission of instructor. Student news executives meet regularly with faculty to critique publication and broadcast product.

JOUR 4113 History of American Journalism
Prerequisite: Permission of instructor. A survey of the history of American journalism and mass media and their relationships to technical, economic, political, and other aspects of American society. May not be repeated for credit as JOUR 5113.

JOUR 4123 Laws of Communications
A study of the development of freedom of press and speech, laws of libel, contempt, privacy and copyright in their relation to press, radio, television, and films.

JOUR 4133 Television Program Production
Prerequisite: JOUR 3183 or 3193 or consent of instructor. Study and practice in writing, editing, and producing dramatic, musical and documentary programs for television, including experience in writing and editing scripts, making and editing videotape, and operating cameras and other studio equipment for non-news programs, with each student producing a program during the semester. One hour class, three hours laboratory.

JOUR 4143 Advanced Reporting
Prerequisites: JOUR 2143 and 3143 or permission of instructor. Study of advanced news gathering techniques and practice in researching and writing difficult types of stories.

JOUR 4153 Editorial, Column, and Review Writing
Study of and practice in writing editorials, columns, and reviews. Includes research and discussion of the function of opinion writing in the mass media.

JOUR(ART) 4163 Advanced Photography and Video
Prerequisite: JOUR(ART) 1163 or JOUR 3163 or consent of instructor. An introduction to advanced photographic techniques, including color film processing, digital photography and nonlinear editing. Various historic and current theories of visual journalism provide a substantive base for the application of techniques.

JOUR 4173 Public Relations Project
Planning, preparation and execution of a public relations program for a specific project.

JOUR 4193 Communication Research Methods
Introduction to the methodologies of behavioral science applied to communication research including design, measurement, data collection, and analysis. Explores the use of surveys, content analysis, focus groups, and experiments in studies of communication processes and effects.

JOUR 4243 Journalism Writing Seminar
A concentrated fundamentals writing course that deals with traditional techniques and various formats for journalistic writing such as editorials, feature stories, columns, reporting, press releases, and interviews.

JOUR 4811-4821 Broadcast Practicum
Practical work experience in the studios of KXRJ-FM and Tech television productions, including work as manager, producer, or director. Only four hours count for the journalism major.

JOUR 4991-4 Special Problems in Journalism
This course, for majors only, requires advanced approval by the instructor and is restricted to second semester juniors and seniors. It is designed to provide certain advanced students with further concentration in a particular area. One, two, three, or four hours may be taken as appropriate.

Latin

LAT 1013 Beginning Latin I
Instruction in the fundamentals necessary to read and write the language. Advanced placement and credit by examination are available to students who have previously studied Latin.

LAT 1023 Beginning Latin II
A continuation of LAT 1013.

LAT 2013 Intermediate Latin I
Prerequisite: LAT 1023 or equivalent. A study designed to continue the development of fundamental skills and to give a general reading knowledge of Latin and acquaintance with classical Latin literature, history, and philosophy.

LAT 2023 Intermediate Latin II
A continuation of LAT 2013.

LAT(GRK) 3001 Greek and Latin Scientific Terminology
The course is designed to assist students with their understanding of English words which have their roots in Greek or Latin. Students who in their course of study need to know specialized vocabulary, such as science, math, pre-med, pre-law and nursing majors, will find this course extremely helpful.

Library Media

LBMD 2001 Introduction to Library Resources
An introduction to the organization and function of resource collections, with practical experience in location, retrieval, and use of reference and research materials; emphasis placed on subject materials. Course will not count toward licensure.

Management

(Additional prerequisites for 3000- and 4000-level courses are listed in the School of Business section of this catalog.)

MGMT 3003 Management and Organizational Behavior
Each semester. Basic principles of management and organizational behavior including planning, organizing, leading, controlling, staffing, decision making, ethics, interpersonal influence, and group behavior; conflict management; job design; and organizational change and development.

MGMT 3013 Management Productivity Tools
Prerequisites: BUAD 2003, BUAD 2053, and MGMT 3003. A course designed to provide students with advanced training in the use of information technology for solving business problems. Students will work in groups on a variety of projects and with a variety of tools.

MGMT 3103 Production Management
Each semester. Prerequisites: BUAD 2003, 2053, and MGMT 3003. A study of the concepts and methods for economical planning and control of activities required for transforming a set of inputs into specified products or services. Emphasis is placed on the design of operations planning and control, quality control, inventory, maintenance, and product planning systems.

MGMT 4013 Management Information Systems
Each semester. Prerequisites: BUAD 2003, 2053, MGMT 3003, and MKT 3043. A study of information processing, the systems concept, the analysis and design of information systems, and database hardware and software technology as they apply to producing information to be used in business decision making. Emphasis will be given to practical application for business.

MGMT 4023 Personnel/Human Resource Management
Prerequisite: MGMT 3003. A study of that function performed in organizations which facilitates the most effective use of people (employees) to achieve organizational and individual goals. Topics covered include the law and personnel/human resource management, personnel analysis, planning, and staffing; performance evaluation and compensation, training and developing of human resources; labor relations, employee safety and health; work scheduling; evaluation of personnel/ human resources management.

MGMT 4053 Small Business Management
Prerequisites: MGMT 3003, MKT 3043, and senior standing. Application of business management principles to the creation and operation of small-scale enterprises. Emphasis on the preparation and implementation of business plans for such enterprises.

MGMT 4073 Special Topics in Management
Prerequisite: MGMT 3003. In-depth exploration of selected management topics. The primary topic will vary from offering to offering; thus, the course may be taken more than once.

MGMT 4083 Business Policy
Each semester. Prerequisites: Senior standing and completion of all junior-level School of Business core courses except FIN 3063 and MGMT 3103, which may be taken concurrently. As the capstone course in the School of Business core, this course examines the application of strategic management processes, including top management's role in situational analysis, strategy selection, strategy implementation, and strategic control, under conditions of uncertainty.

MGMT 4093 Human Behavior in Organizations
Prerequisite: MGMT 3003. A study of individual and group behavior in organizations. Topics covered include personality and individual differences, personal systems, values and ethics, perception, attribution theory, goal setting, reinforcement theory, theories of motivation and leadership, group systems, power and social influence, and organizational structure.

Marketing

(Additional prerequisites for 3000- and 4000-level courses are listed in the School of Business section of this catalog.)

MKT 3043 Principles of Marketing
Each semester. Marketing fundamentals, the ultimate consumer, the retailing and wholesaling systems, marketing functions, marketing policies, marketing costs, critical appraisal of marketing, marketing and the government.

MKT 3163 Consumer Behavior
Prerequisite: MKT 3043. A study of the development of consumer decision making processes and the factors which influence them. Psychological, sociological, economic, cultural, and situational factors are examined. Their impact on marketing formulation, both domestic and international, is emphasized.

MKT 4063 Advertising
Prerequisite: MKT 3043. The "how" and "why" of advertising: principal problems faced by advertisers and advertising agencies, approaches, policies, and procedures as related to successful marketing techniques.

MKT 4073 Service Marketing Management
Prerequisite: MKT 3043. The course offers an in-depth exploration of the differences between tangible goods and services, the problems created by those differences, and the ways in which marketing managers can overcome these problems. The primary focus of the course will be on differences in consumer evaluation processes between goods and services, and specific issues that marketers have to address when dealing with services.

MKT 4093 International Marketing
Prerequisite: MKT 3043. Analysis of opportunities, distinctive characteristics and emerging trends in foreign markets, including exploration of alternative methods and strategies for entering foreign markets; organizational planning and control; impact of social, cultural, economic and political differences; and problems of adapting American marketing concepts and methods.

MKT 4103 Special Topics in Marketing
Prerequisite: MKT 3043. In-depth exploration of selected marketing topics. The primary topic will vary from offering to offering, thus, the course may be taken more than once.

MKT 4143 Marketing Management
Fall. Prerequisites: MKT 3043, MGMT 3003, MKT 3163 and senior standing. Advanced study of decisions facing a marketing executive. Topics covered include product planning, consumer behavior, promotion, sales management, and pricing.

MKT 4153 Marketing Research
Spring. Prerequisites: BUAD 2053. MKT 3043. A study of the development of the basic methodology in research design for primary and secondary data, including requirements for collection, analysis, editing, coding, and presentation of data to support marketing decisions.

Mathematics

MATH 0803 Basic Mathematics
Content of this course is as follows: the language of algebra, fundamental operations, signed numbers, equations and problem solving. The grade in the course will be computed in semester and cumulative grade point averages, but the course may not be used to satisfy general education requirements nor provide credit toward any degree. A student who makes a "D" or "F" in MATH 0803 must repeat the course in each subsequent semester until he or she earns a grade of "C" or better. Students who make a grade of "C" or better in MATH 0803 must enroll in MATH 0903 the following semester.

MATH 0903 Intermediate Algebra
Prerequisites: One unit of high school algebra, or MATH 0803, or consent of the department of mathematics. The purpose of this course is to prepare for college-level mathematics those students whose mathematics background is inadequate. Content of the course is fundamental operations, linear equations, special products and factoring, fractions, functions, graphs, and systems of linear equations. The grade in the course will be computed in semester and cumulative grade point averages, but the course may not be used to satisfy general education requirements nor provide credit toward any degree. A student who makes a "D" or "F" in MATH 0903 must repeat the course in each subsequent semester until he or she earns a grade of "C" or better.

NOTE: A grade of “C” or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 1103 Algebra for General Education
Prerequisite: Score of 19 or above on the mathematics portion of the Enhanced ACT, or score of 390 or above on the quantitative portion of SAT, or score of 43 or above on the ASSET Intermediate Algebra test, or grade of "C" or better in MATH 0903. Content of course will include data analysis through a study of regression equations, functions, including polynomial, rational, and exponential, variation, modeling, and systems of equations. May not be taken for credit after completion of Math 1113 or any higher level mathematics course.

MATH 1113 College Algebra
Prerequisite: Score of 19 or above on the mathematics portion of the Enhanced ACT, or score of 390 or above on the quantitative portion of SAT, or score of 43 or above on the ASSET Intermediate Algebra test, or grade of "C" or better in MATH 0903. Exponents and radicals, introduction to quadratic equations, systems of equations involving quadratics, ratio, proportion, variation, progressions, the binomial theorem, inequalities, logarithms, and partial fractions.

MATH 1203 Plane Trigonometry
Corequisite: MATH 1113. A study of the properties of the trigonometric functions and their graphs, solution of right and oblique triangles, formulas and identities, inverse functions, and trigonometric equations.

MATH 1913 Precalculus
Prerequisites: High School Algebra I and II, Trigonometry, and a Math ACTE subscore of at least 19, or MATH 1113 and MATH 1203. This course is designed to provide additional mathematical background before enrolling in the calculus sequence.

MATH 2033 Mathematical Concepts I
Prerequisite: MATH 1113 or MATH 1103. For elementary education majors. Elementary set theory, numeration systems, elementary number theory and the real number system.

MATH 2043 Mathematical Concepts II
Prerequisite: MATH 2033. For elementary education majors. A continuation of MATH 2033, including a study of the elementary concepts of probability and statistics, and an informal study of geometry.

MATH 2163 Introduction to Statistical Methods
Prerequisite: MATH 1113 or 1103 or consent of the instructor. Descriptive statistics, random variables, probability and sampling distributions, estimation, hypothesis testing, regression, analysis of variance, non-parametric techniques. May not be taken for credit after completion of MATH 3153.

MATH 2183 Statistical Process Control
Prerequisite: MATH 2163 or equivalent. This is a course in statistical process control using Deming’s philosophy for the improvement of quality, productivity, and competitive position.

MATH 2243 Calculus for Business and Economics
Prerequisite: Algebra I and algebra II in high school with grades of "C" or better and a score of 22 or higher on the mathematics portion of the ACTE examination, or MATH 1113. An introduction to the concepts of differentiation and integration. Emphasis will be placed on applications of calculus in business, economics, accounting, social sciences, and life sciences. May not be taken for credit after completion of MATH 2914 or equivalent.

MATH 2703 Discrete Mathematics
Prerequisite: MATH 1113. A study of graph theory, trees, combinatorics, logic, and Boolean Algebra.

MATH 2914 Calculus I
Prerequisites: MATH 1113 and MATH 1203 or consent of instructor. This is the first of two courses covering the calculus of functions of a single variable. Duplicate credit for MATH 2913 and MATH 2914 will not be allowed.

MATH 2924 Calculus II
Prerequisite: MATH 2914 or equivalent. This is the second of two courses covering the calculus of functions of a single variable. Duplicate credit for MATH 2933 and MATH 2924 will not be allowed.

MATH 2934 Calculus III
Prerequisite: MATH 2924 or equivalent. This is the third course in the elementary calculus sequence. It covers the calculus of functions of several variables. Duplicate credit for MATH 2943 and MATH 2934 will not be allowed.

MATH 3033 Methods of Teaching Elementary Mathematics
Prerequisite: MATH 2043. A course on methods of teaching the mathematics of the elementary school using mathematical concepts and principles taught in these grades.

MATH 3123 College Geometry
Prerequisite: MATH 2924. A formal approach to plane geometry with coordinates; sets, points, lines, planes, distance, and coordinate systems, angles, congruence, parallelism, and similarity.

MATH 3153 Applied Statistics I
Prerequisite: MATH 2924. A balanced approach emphasizing both theory and applications will be taken. Topics include descriptive statistics, exploratory data analysis, probability and probability models, discrete and continuous random variables, confidence intervals, hypothesis testing, and control charts. Students will be required to collect data, use a current statistical software package to analyze the data, and make inferences based upon the data analysis as part of an individual and/or group project.

MATH 3163 Mathematical Modeling I
Prerequisites: MATH 2703 and MATH 2943. This course provides an introduction to the mathematical modeling process and applies this process to problems that may be modeled with calculus or lower-level mathematics. Emphasis will be placed on connections of mathematics to application areas such as business, industry, economics, physical sciences, biological sciences, medicine, and social sciences.

MATH 3203 Introduction to Analysis
Prerequisites: MATH 2934 and MATH 2703. A careful development of the real number system and the theory of calculus on the real line.

MATH 3243 Differential Equations I
Corequisite: MATH 2934. A study of the differential equations of the first order and first degree; linear equations, with constant coefficients; methods of undermined coefficients, operators, variations of parameter, and change of variable; equations of order one and higher degree, and special equations of order two.

MATH 4003 Linear Algebra I
Prerequisite: MATH 2924. Matrices and matrix algebra, systems of linear equations, determinants, eigenvalues, eigenvectors, general vector spaces, linear transformations.

MATH 4033 Abstract Algebra I
Prerequisite: MATH 2703. A study of groups and other algebraic structures, including sub-groups, normal sub-groups, quotient groups, abelian groups, groups of permutations, homomorphisms, kernel, and range.

MATH 4103 Linear Algebra II
Prerequisite: MATH 4003 or the consent of the Department of Mathematics. A continuation of MATH 4003 with emphasis on abstract vector spaces, inner product spaces, linear transformations, kernel and range, and applications of linear algebra. MATH 5103 may not be taken for credit after completion of MATH 4103 or equivalent.

MATH 4113 History of Mathematics
Prerequisite: MATH 2934. A study of selected topics from the history and nature of mathematics from ancient to modern times. Emphasis will be placed on the historical development of mathematics through a study of biographies of prominent mathematicians and the evolution of some important mathematical concepts. The fundamental role of mathematics in the rise, maintenance, and extension modern civilization will be considered. MATH 5113 may not be taken for credit after completion of this course.

MATH 4133 Abstract Algebra II
Prerequisite: MATH 4033. Groups, subgroups, homomorphisms, isomorphisms, complex numbers, finite groups.

MATH 4153 Applied Statistics II
Prerequisite: MATH 3153. This course is a continuation of MATH 3153 with emphasis on experimental design, analysis of variance, and multiple regression analysis. Students will be required to design and carry out an experiment, use a current statistical software package to analyze the data, and make inferences based upon the analysis.

MATH 4163 Mathematical Modeling II
Prerequisites: MATH 3153, MATH 3243 and MATH 3163. This course is a continuation of MATH 3163. Mathematical models studied in this course may require a knowledge of any area of mathematics normally included in an undergraduate curriculum. At least one model will be based on a problem that is given to the class by a representative from business or industry. Emphasis will be placed on connections of mathematics to application areas such as business, industry, economics, physical sciences, biological sciences, medicine, and social sciences.

MATH 4173 Advanced Biostatistics
Prerequisite: An introductory statistics course or permission of instructor. This course will include analysis of variance, one factor experiments, experimental design with two or more factors, linear and multiple regression analysis, and categorical data analysis.

MATH 4243 Differential Equations II
Prerequisites: MATH 3243 and MATH 4003 or consent of the instructor. A continuation of MATH 3243 with emphasis on higher order and systems of differential equations.

MATH 4253 Advanced Calculus I
Prerequisite: MATH 3203. The real numbers, the topology of cartesian spaces and convergence of continuous functions.

MATH 4273 Complex Variables
Prerequisite: MATH 2934. An introduction to complex variables. This course will emphasize the subject matter and skills needed for applications of complex variables in science, engineering, and mathematics. Topics will include complex numbers, analytic functions, elementary functions of a complex variable, mapping by elementary functions, integrals, series, residues and poles and conformal mapping. MATH 5273 may not be taken for credit after completion of this course.

MATH 4283 Advanced Calculus II
Prerequisite: MATH 4253. Differentiation, integration and infinite series.

MATH 4293 Introductory Topology
Prerequisite: MATH 4253. Metric spaces, topological spaces, mappings, limit point, continuity, connectedness, and compactness. MATH 5293 may not be taken for credit after completion of this course.

MATH 4703 Special Methods in Mathematics
Prerequisites: SEED 2002 and junior standing or permission of the instructor. This course, designed for prospective junior and senior high mathematics teachers, will provide the student with knowledge of current research and practice in mathematics education, a setting in which to apply that knowledge, and the opportunity to assess their teaching performance and formulate a plan for improvement.

MATH 4772 Mathematics Teaching Practicum
A course designed to provide mathematics education majors with experience in teaching mathematics and assessing student performance.

MATH 4991-4 Special Problems in Mathematics
The content and credit for this course will be designed to meet the needs of the student.

Medical Technology

(Medical Technology courses are offered at affiliated institutions.)

MEDT 4012-3 Clinical Microscopy and Body Fluids
Use of the microscope in laboratory diagnostic procedures and introduction to body fluid chemistry, particularly blood, urine and spinal fluids. Emphasis on pathological conditions resulting from abnormal concentrations of substances.

MEDT 4029 Hematology
Consideration of typical and atypical medical laboratory procedures in hematology with emphasis on principles, methodology, sources of error, and clinical application. Supervised training in standard and special laboratory techniques.

MEDT 4035 Immuno-hematology
Consideration of typical and atypical medical laboratory procedures in immuno-hematology and blood-banking with emphasis on principles, methodology sources of error, and clinical application. Supervised training in standard and special laboratory techniques.

MEDT 4048-9 Clinical Chemistry and Instrumentation
Consideration of methods of determining chemical composition of body fluids and analysis using standard and special laboratory instruments. Study of design, construction, and operation of instruments such as balances, centrifuges, pH meters, autoanalyzers, null-balances, others.

MEDT 4056-7 Microbiology
Consideration of typical and atypical medical laboratory procedures in microbiology with emphasis on diagnostic medical bacteriology virology, and mycology. Supervised training in standard and special laboratory techniques.

MEDT 4064 Parasitology
Consideration of typical and atypical medical laboratory procedures in parasitology with emphasis on methodology and clinical application. Supervised training in standard and special laboratory techniques.

MEDT 4073 Serology
Consideration of typical and atypical medical laboratory procedures in serology with emphasis on methodology, sources of error, and clinical application. Supervised training in standard and special laboratory techniques.

MEDT 4081-2 Special Topics
Subject matter may include the following: hospital orientation, laboratory management, radioisotope techniques, laboratory safety, special projects, special techniques, quality control procedures, and seminars on various subjects deemed necessary by hospital personnel.

Middle Level Education

MLED 2001 Introduction to Education
Prerequisite: Stage I course and will be taken before admittance to the Middle Level Teacher Education Program. Introduction to philosophy of education and to the concept of education as a career with an emphasis on middle-level education. The format will include a weekly lecture and on-site field experiences in a public school setting.

MLED 2011 History of Education
Prerequisite: Stage I course and will be taken before admittance to the Middle Level Teacher Education Program. The purpose of this course is to provide potential middle-level teachers with an overview of the social and historical aspect of the American Education System.

MLED 3012 Research Foundations
Prerequisite: Admission of Stag II to the Middle Level Teacher Education Program. Presentation of the knowledge base and practice in the skills needed to locate educational research information; analyze, synthesize, and evaluate the complied materials; and write a professional research report based on the composite findings.

MLED 3023: Nature and Needs of the Middle Level Student
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program. This course is an overview of the physical, social, emotional, intellectual, and moral development of early adolescents and the developmental implications on curriculum and instruction.

MLED 3034: Literacy Development in the Middle Grades
Prerequisite: Admission to Stage II of the Middle Level Teacher Program. Presentation of the knowledge base and methodology needed to guide students in the middle grades toward competency and maturity as readers and writers.

MLED 3041 Home-School Communication
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program. Presentation of methods of communication between the home and school for the classroom teacher will be explored. The use of classroom management software for school reports, student information sheets, newsletters, electronic mail, and letters to home as well as telephone skills will be practice.

MLED 3051 School Law
Prerequisite: Admissions to Stage II of the Middle Level Education Program. Intensive on campus classroom exploration of the principles of curriculum instruction teaching methods, use of community resources and evaluation as related to teaching in middle level education.

MLED 3062 Tests & Educational Measurements
Prerequisite: Admission to Stage II of the Middle Level Program. A survey of test theory with particular emphasis upon the use of assessment techniques in the middle level classroom as an educational decision-making tool.

MLED 3071 Diversity in the Classroom
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program. A study of the major areas of exceptionalities including the learning disabled, mentally retarded, physically handicapped, and the gifted, and their special needs in a school program.

MLED 3081 Instructional Technology
Prerequisite. Admission to Stage II of the Middle Level Teacher Education Program. This course is designed to familiarize Middle Level Education majors with a variety of non-print media resources available for supporting instruction. These include computer technology (including CD-ROM, video laser discs), educational computer software, telecommunications (including use of the Internet and the World Wide Web), instructional television, and other resources for preparation of instructional materials. A primary focus of this course is on utilizing resources which most effectively enhance the learning process. The concepts stressed in this course are research based.

MLED 3092 Psychological Foundations
Prerequisite. Admission to Stage II of the Middle Level teacher education program. General principles of learning, the learner's potentialities with attention to individual differences, the environment of effective learning, application of psychology to educational problems.

MLED 3102 Reading Through Literature in the Middle Ages
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program. A study of the development and source of literature for the middle childhood/early adolescent student. Emphasis will be on integrating literature across the curriculum and on methods of encouraging reading as a lifelong pleasurable pursuit.

MLED 4004 Middle Level Curriculum and Pedagogy
Prerequisite: Admission to Stage II of the Middle Level Teacher Program. A study of the developmental curriculum, instruction and pedagogy for teaching the middle level student. Emphasis will be on an interdisciplinary approach to curriculum design.

MLED 4012 Teaching Reading and Study Strategies in the Content Area
Prerequisite: Admission of Stage II of the Middle Level Teacher Education Program. Presentation of the knowledge base and practice in the teaching/learning strategies related to reading in all content area disciplines.

MLED 4023 Guided Field Experiences
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program and concurrent enrollment in MLED 4004 and MLED 4012. MLED 4023 Guided Field Experiences is a series of 45 hours of observation, participation, and teaching experiences ranging from individual to large group settings conducted in selected middle level settings designed to prepare the teacher candidate for a smooth transition to internship in a clinical setting.

MLED 4912 Internship
(Twelve hour course.) Prerequisites: Admission to Stage III and Internship. MLED 4912 Internship is a minimum of fifteen weeks of reflective clinical internship at the middle level. In a select setting under supervision of experienced middle level professionals, teacher candidates will prepare, facilitate, and evaluate an appropriate curriculum experience for instruction of the early adolescent. Fee $100.00.

Middle Level Mathematics and Science

MLMS 4406 Integrating Mathematics and Science in Middle School Education
Prerequisite: Admission to Stage II of the Middle Level Teacher Education Program. This course outlines methods, materials, and procedures for integrating middle level mathematics and science education.

Military Science-ROTC

(For further information concerning military science courses, contact the Tech Registrar's Office.)

MS 1101 Leadership I
Fall. A study of the importance of communications, decision making, and the understanding of human behavior as it affects leadership situations. Includes introduction to basic military skills.

MS 1111 Leadership II
Spring. Introduction to leadership and development and basic tactical skills. Includes introduction to basic military skills.

MS 2312 Military Organization/Tactics I
Fall. Emphasis on the development of effective leadership skills, basic rifle marksmanship training, and on understanding how the leadership process works in organizational situations.

MS 2402 Military Organization/Tactics II
Continuation of leadership development training from MS 2312. Introduction to practical work in map reading, CPR course and basic lifesaving steps for first aid.

MS 3503 Advanced Leadership and Tactics I
Fall. An in-depth study of unit tactics and related individual skills, advanced map reading and their practical application. Emphasis on person to person leadership skill development.

MS 3603 Advanced Leadership and Tactics II
Spring. A continuation of MS 3503.

MS 4703 Applied Leadership and Management I
Fall. A study of command and staff functions and practical exercises in planning, organizing, and supervising. Students in this course plan and administer all activities of the cadet corps. Emphasis is placed on leadership and management of larger organizations.

MS 4803 Applied Leadership and Management II
Spring. A continuation of MS 4703.

Military Leadership Laboratory
Prerequisite: Enrollment in the appropriate level of the Military Science Program. Emphasis is on continued instruction and practical application of military fundamentals learned in the classroom. Course is designed to develop individual character, leadership abilities, and other attributes essential to an officer and a leader.

Museum

MUSM(ANTH) 4403 Interpretation/Education through Museum Methods
Prerequisites: Senior or Graduate standing, or permission of instructor. Museum perspectives and approaches to care and interpretation of cultural resources, including interpretive techniques of exhibit and education-outreach materials, and integrating museum interpretation/education into public school and general public programming. Class projects focus on special problems for managing interpretive materials in a museum setting. Graduate level projects or papers involve carrying out research relevant to the Museum's mission and relating to current Museum goals.

Music

MUS 1000, 3000 Recital Attendance
Offered on a pass/fail basis. Students are required to attend a specified number of recitals each semester and must pass at least six semesters to receive the B.A. degree in music or music education.

MUS 1241, 1251 Applied Voice/Italian Diction
Study of the rules of pronunciation for Italian lyric diction. Must be taken concurrently with MUS 1231 for semesters 1 and 2 of Applied Voice.

MUS 1321 Jazz Piano
Prerequisites: MUS 1713, MUS 1201 or 1441, or instructor approval. Materials and practices for typical jazz keyboard playing. One hour per week.

MUS 1431 Class Piano
Non-music majors. For students who have little or no music reading skills, this course concentrates on basic piano skills while learning to read music. At the end of the course students will play pieces using a chord-based approach in several keys and styles.

MUS 1441 Class Piano I, II, III, and IV
Music majors. A development of the fundamental skills of the piano, emphasizing those aspects most useful to non-piano majors. A knowledge of chords is stressed, as is sight reading, improvising, playing in all keys and harmonizing melodies. The second year of class piano extends these skills adding the reading of multiple score parts, modulation, harmonizing with secondary chords, improvising in various composers' styles, playing a wide variety of literature, and accompanying.

MUS 1481 Stringed Instruments
For music majors only. A study of instruments of the string family (violin, viola, cello, and string bass) with emphasis on the fundamentals of good tone production and bowing techniques to the extent that scales and grade one and two orchestra music can be played on selected instruments.

MUS 1601, 3601, Orchestral Repertoire
Prerequisite: permission of instructor. A study of the landmarks of orchestral repertoire for winds and percussion sections through the preparation and rehearsal of the literature.

MUS 1703 Music Fundamentals
Music fundamentals to be included are reading pitch and rhythm, basic notation, rudimentary music theory information about scales, harmony, dynamics, tempo; playing a melody instrument; rudimentary ear training, music composition, and music listening skills.

MUS 1713, 1723 Theory I and II
To be taken concurrently with MUS 1731, 1741. Study of scales, triads, seventh chords, diatonic harmonies, simple modulation. Introduction to small forms.

MUS 1731, 1741 Ear Training I and II
The elements of music fundamentals, both written and aural. A prerequisite for all future work in music theory.

MUS 2003 Introduction to Music
Prerequisite: None. An overall view of music history from Medieval to Contemporary times with a focus on relating musical happenings and concepts to the other arts.

MUS 2201 Accompanying Seminar
For piano majors, or by permission of instructor. Development of basic accompanying techniques. Class coaching and presentation one hour weekly, plus assigned accompanying responsibilities in a variety of media. May be repeated three times.

MUS 2241 Applied Voice/ German Diction
Study of the rules of pronunciation for German lyric diction. Must be taken concurrently with MUS 1231 for semester 3 of Applied Voice.

MUS 2251 Applied Voice/French Diction
Study of the rules of pronunciation for French lyric diction. Must be taken concurrently with MUS 1231 for semester 4 of Applied Voice.

MUS 2401 Instrumental Concepts
Prerequisite: ability to read treble and bass clefs and rhythms. This course is designed to give vocal and keyboard education majors a functional knowledge of band and orchestral instruments. This course is designed for students with no instrumental experience.

MUS 2421,2431 Woodwind Instruments
For music majors. A study of playing techniques and teaching techniques of the woodwind family (flute, oboe, clarinet, bassoon, and saxophone). Playing of selected instruments will be developed through major scales and grade one and two solos. Two hours weekly.

MUS 2441 Class Voice
(Music majors). Fall. Development of basic vocal techniques through group participation and solo singing. Emphasis is placed on understanding of vocal pedagogy. Supervised practice two hours per week.

MUS 2451 Class Voice
(Non-music majors). Fall. Development of basic vocal techniques through group participation and solo singing. Supervised practice two hours per week.

MUS 2713, 2723 Theory III and IV
To be taken concurrently with MUS 2731, 2741. More advanced harmonic concepts, modulation, chromatic harmonies. Further study of larger forms.

MUS 2731, 2741 Ear Training III and IV
Further work in more advanced ear training and sight singing.

MUS 3281 Secondary Instrumental Methods and Materials I
Laboratory experience in conducting and performance of materials appropriate to teaching band in the public school.

MUS 3321 Practice of Improvisation
Prerequisite: successful completion of MUS 3332 or instructor approval. Laboratory experience in improvisation in all jazz styles. This course may be repeated for credit.

MUS 3322 Theory of Improvisation (Jazz)
Prerequisite: MUS 1713-1723, 1441, and/ or instructor approval. Music theory, materials and practices for improvising or extemporaneous playing. One-hour class, two-hour laboratory per week. May not be repeated for credit. May not be taken for credit after completion of MUS 3332.

MUS 3332 Theory of Improvisation (Jazz)
Prerequisite: Successful completion of MUS 3322. Advanced music theory, materials and practices for improvising or extemporaneous playing. One-hour class, two-hour laboratory per week. May not be repeated for credit.

MUS 3401 Brass Instruments
For music majors. A study of the instruments of the brass family to the extent that scales and grade one and two solos can be played on selected instruments. Class two hours, practice two hours.

MUS 3442 Piano Pedagogy
Spring. A study of pedagogical principles involved in the teaching of private and class piano, with emphasis on outside reading, class discussion, and observation of actual lessons and classes.

MUS 3712 Counterpoint
Prerequisite: MUS 2723. The contrapuntal techniques and forms of the Baroque era. Analysis of Canons, two-and-three-part Inventions, and fugues of J.S. Bach plus written exercises in two-voice counterpoint.

MUS 3762 Orchestration
Prerequisite: 16 hours of theory or permission of instructor. A study of instrumentation and transposition with an introduction to scoring for band. Designed as a practical preparation for public school teachers.

MUS 3771-2, 4771-2 Composition
Prerequisites: 16 hours of music theory and senior standing or consent of instructor. Offered as demand warrants. The study of basic compositional techniques of twentieth-century works and completion of composition project.

MUS 3773 History of Music I
Fall. Prerequisite: MUS 2723 (Theory IV) or permission of instructor. A study of Western Art music from ancient civilization to A.D. 1750.

MUS 3783 History of Music II
Prerequisite: MUS 2723 or permission of instructor. A study of classical and 19th century music.

MUS 3793 History of Music III
Prerequisite: MUS 2723 or permission of instructor. A study of 20th century music. Includes one unit of non-western music.

MUS 3802 Principles of Conducting
Fall. Principles and practices of conducting; a study of music terminology and transpositions; development of baton techniques based on the practice of outstanding choral and instrumental conductors.

MUS 3821 Secondary Choral Methods and Materials I
Choral conducting techniques, tone and diction styles and interpretation, rehearsal techniques, programs and concerts, planning and organization, and service information. Conducting of student ensembles and organizations. Methods and materials I will include review of literature for large and small ensembles appropriate for middle school, junior high, and smaller high school teaching situations.

MUS 3843 Music in the Elementary Classroom I
Prerequisite: Admission to Stage II of the teacher education program. Fundamentals of music, listening, group singing, the reading of music, terminology, introduction to the keyboard. Designed to familiarize the student with singing and listening materials which contribute to the musical growth of the child; methods of successful music teaching for the elementary classroom teacher. This course may not be taken for credit by music majors.

MUS 3853 Music in the Elementary Classroom II
Prerequisites: EDFD 2003 and admission to Stage II of the teacher education program. A study of current practices, methods, and materials for teaching general music to elementary school children with emphasis on curriculum development.

MUS 4001 Senior Recital
Prerequisite: Six semesters of major applied study. Required of all music and music education majors. Pass/fail basis.

MUS 4201 Accompanying Seminar
Prerequisite: Four semesters of MUS 2201 and/or permission of instructor. Advanced accompanying techniques for piano majors. Class coaching and presentation one hour weekly, plus assigned responsibilities in a variety of media. May be repeated three times. May substitute for required 3000 level hour of major ensemble enrollment with assignment by instructor to successfully accompany major ensemble or recital.

MUS 4281 Secondary Instrumental Methods and Materials II
Laboratory experience in conducting and performance of materials appropriate to teaching band in the public school.

MUS 4461 Percussion Instruments
For music majors. A study of the instruments of the percussion family to the extent that scales and/or rudiments and grade one and two solos can be played on selected instruments. Designed as a practical preparation for public school teachers. Two hours weekly.

MUS 4701 Special Methods in Music
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4809. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching music.

MUS 4712 Form and Analysis
Fall. Prerequisite: MUS 2723. A study of the standard forms of the Classical period with emphasis on instrumental forms and genres developed in the period 1750-1825 and the continuation and expansion of those forms in the nineteenth century.

MUS 4803 History of American Music: Jazz and Folk
An in-depth study of folk music and the relationship between these forms and American life. Research, aural activity, and analysis are used to explore a variety of musical forms, composers, and performers.

MUS 4811 Keyboard Literature
Fall. A survey of piano or organ literature with emphasis on historical development, analysis of selected compositions, and listings of suitable pedagogical materials.

MUS 4821 Secondary Choral Methods and Materials II
Choral conducting techniques, tone and diction styles and interpretation, rehearsal techniques, programs and concerts, planning and organization, and service information. Conducting of student ensembles and organizations. Methods and materials II will include a review of historically important choral works and the music of the master composers of each musical epoch. Sight singing methods for group sight reading will be reviewed.

MUS 4832 Vocal Solo Literature/Pedagogy
Spring. Prerequisite: Junior standing. Introduction to and comparison of vocal solo literature and the teaching of vocal technique.

MUS 4881-3 Workshops in Music
Prerequisite: Permission of instructor. Course with variable credit designed to meet specific needs of participants. Each credit hour will require fifteen clock hours of instruction.

MUS 4972 Marching Band Techniques
Fall. For music majors only. A study of the problems, practices, techniques, and the organization and administration of the marching band.

MUS 4991-4 Special Problems in Music
Prerequisites: Senior standing and permission of the instructor. Additional work in an area of the student's choice under the direction of the faculty member competent in that area.

Musical Performance

Musical performance includes private study, class piano, class voice, and ensembles. In numbering applied music courses, the first digit, numeral 1, is used for freshman and sophomore level courses; the numeral 3 for junior and senior-level courses. The second and third digits indicate applied concentration area (e.g. 20 = piano) and the final digit indicates hours of semester credit.

Applied Music (private instruction) is required of all music majors; each course may be repeated three times. Applied music students may be assigned participation in designated ensembles in addition to required ensembles. Ensembles are given in the curricula in Music and Music Education.

Eight hours of credit may be obtained at the freshman and sophomore level in any applied area; 8-12 hours may be obtained at the junior and senior level. To qualify for three hours per semester, a student must have a minimum 3.50 cumulative GPA in applied music, a 3.00 cumulative GPA in total hours, junior standing and recommendation of the instructor.

MUS 1-1-2, 3-1-3, Applied Music. Use appropriate numbers to indicate applied study area.

Trumpet- 1001-2, 3001-3Violin-1101-2, 3101-3

French Horn- 1011-2, 3011-3Viola-1111-2, 3111-3

Trombone-1021-2, 3021-3Cello-1121-2, 3121-3

Euphonium-1031-2, 3031-3String Bass- 1131-2, 3131-3

Tuba- 1041-2, 3041-3Percussion-1141-2, 3141-3

Clarinet- 1051-2, 3051-3Piano-1201-2, 3201-3

Oboe- 1061-2, 3061-3Harpsichord-1211-2, 3211-3

Flute-1071-2, 3071-3Organ- 1221-2, 3221-3

Saxophone- 1081-2, 3081-3Voice-1231-2, 3231-3

Bassoon- 1091-2, 3091-3

Ensembles

In numbering ensemble courses, the first digit, numeral 1, is used for freshman and sophomore level courses, the numeral 3 for junior and senior-level courses. The two middle digits are used for ensemble identification. Each listing (e.g., 1501 and 3501) - for Band) may be repeated three times.

MUS 1301, 3301 Opera Workshop
Prerequisite: Permission of instructor. The course of study will involve selected scenes from standard opera literature prepared for dramatic presentation. Research will be required pertaining to the historical setting, appropriate costumes, and mannerisms of the period being studied. Staging techniques and set building will be included as deemed necessary to each presentation.

MUS 1311, 3311 Jazz Ensemble
Membership selected by audition. Study and performance of big band jazz styles from the 1930's to present. Rehearsal two hours weekly.

MUS 1501, 3501 Band
Open to students who can satisfy audition requirements. Marching Band, fall semester, or permission of instructor is a prerequisite for Concert Band, spring semester. Fall semester stresses marching band and one major concert performance. Spring semester stresses symphonic and concert bands in the study and performance of quality literature. Four hours weekly.

MUS 1511, 3511 Brass Choir
Membership selected by audition. Study and performance of representative brass literature. Rehearsal 3 hours weekly.

MUS 1521, 3521 Woodwind Ensembles
Open to all students. Membership selected by audition. Two hours weekly.

MUS 1531, 3531 Brass Ensembles
Open to all students. Membership selected by audition. Two hours weekly.

MUS 1541, 3541 Percussion Ensembles
Open to all students. Membership selected by audition. Two hours weekly.

MUS 1551, 3551 String Ensembles
Open to all students. Membership selected by audition. Two hours weekly.

MUS 1571, 3571 University Choir
Open to all students. A select vocal group of approximately sixty members selected by audition. Study and performance of choral literature of all periods. Three hours weekly.

MUS 1581, 3581 Chamber Choir
Open to all students by audition. A select choral ensemble of approximately sixteen voices specializing in the performance of chamber choral music from all historical periods. Two or three concerts are presented on campus each semester. Off-campus performances include tours and public relations functions for the university. Three hours weekly.

MUS 1591, 3591 Small Vocal Ensembles
Open to all students. Participation in the various ensemble groups such as trios and quartets: study of selected music literature. Membership selected by audition. Two hours weekly.

MUS 1611, 3611 Music Theatre Workshop
Prerequisite: permission of instructor. Selected songs from standard musical theatre literature will be prepared for public performance with an emphasis on popular professional performance techniques. Credit will be given for one leading part or for a series of supporting parts. Two hours weekly. Each course may be repeated 3 times for credit.

MUS 1621, 3621 Music Theatre Practicum
Prerequisite: permission of instructor. Credit will be given for participation that results in a public performance of a major production. Vocal, instrumental, and/or audiovisual technological participation will be accepted. A minimum of 28 hours participation is required. Each course may be repeated 3 times for credit.

MUS 1671, 3671 University-Community Choir
Evening rehearsals. Open to all students and other interested persons. Assignments made on the basis of voice classification. Study and performance of choral literature of all historical periods. One and one-half hours weekly.

MUS 1681, 3681 Concert Chorale
Open to all students by audition. A select choral ensemble of approximately forty voices performing choral music from all historical periods. Two or three major concerts are presented each semester. Four hours weekly.

MUS 4581 Vocal Ensembles
Summer. Membership selected by audition. Study and performance of representative vocal literature. Ensembles may be small ensembles such as trios or quartets, or may be large ensembles such as choir or chamber choir. Six hours weekly.

Nursing

NUR 1001 Orientation to Nursing
Fall. A one hour elective course for students interested in pursuing nursing as a professional career. The student is introduced to the history of nursing, issues and trends, basic nursing education, advanced education for nurses, and nursing career opportunities. Students interested in nursing or a career in science are encouraged to take this course during the fall semester of their freshman year. Lecture 1 hour.

NUR 2023 Introduction to Professional Nursing
Summer prior to Junior year. Prerequisite: Permission of Admission and Progression Committee. A non-clinical, three-hour course which introduces the student to selected basic concepts in professional nursing. Purpose of the course is to introduce nursing concepts to nursing majors. The course focuses on nursing as a caring profession, nurses' roles and functions, ethics, standards, legal aspects, holism, wellness, health care settings, communication, teaching/learning, critical thinking, and the nursing process. The Conceptual Framework and Philosophy of Tech's Department of Nursing will be explored. Lecture 3 hours.

NUR 2303 Nutrition
Fall. Principles of normal nutrition at all stages of the life cycle are emphasized. Growth and development needs are incorporated into the maintenance, restoration of nutritional health, and in the prevention of nutritional deficit. Exploration is conducted of the social, religious, and cultural factors which affect the family's nutritional health. Lecture 3 hours.

NUR 3103 Nursing Skills I
Summer session prior to junior year. Prerequisite: Admission into upper-level junior nursing courses. The course provides the student with theory and guided practice of basic psychomotor and math nursing skills in a multimedia simulated laboratory setting. $10 laboratory fee. Lecture 2 hours. Laboratory 3 hours equal to one credit hour.

NUR 3204 Theories and Concepts in Nursing I
Fall, Prerequisite: Admission into upper-level junior nursing courses. Co-requisites: NUR 3502 and 3404. This course is an introduction to the cognitive framework of the curriculum which emphasizes holistic man, environment, and nursing as an interacting system. The course focuses on bio-psycho-social and spiritual behaviors as indicators of health throughout the life cycle. The nursing process and the scientific method of problem solving are presented as systematic approaches to nursing care. Further emphasis is placed on assessment of health needs and health practices of individuals in structured episodic health care settings. Beginning concepts of professionalism and care of clients with self-limiting alterations to health are integral parts of this course. Lecture 4 hours.

NUR 3304 Health Assessment
Fall. Prerequisite: Departmental permission. The student uses the nursing process to assess the client by the utilization of observation, palpation, percussion, and auscultation skills. The language of Health Assessment is taught and methods of proper documentation are emphasized. The course provides guidance in specific assessment techniques and enables the student to recognize normal findings throughout the life cycle. The student collaborates with members of the health-care team in the sharing of health findings in order to make a specific nursing diagnosis. $10 laboratory fee. Lecture 3 hours. Laboratory 3 hours equal to one credit hour.

NUR 3404 Practicum in Nursing I -- Nursing the Individual Client
Prerequisite: Admission to upper level junior nursing courses. Practicum facilitating the integration, synthesis, and application of theories, concepts, and psychomotor nursing skills taught in NUR 3103, 3204, 3304 and 3502. The student uses maintenance nursing behaviors to assist individuals to reach functional adaptation. 12 Clinical hours equal to 4 credit hours. $10 laboratory fee.

NUR 3502 Nursing Skills II
Fall. Prerequisites: NUR 3103. A continuation of NUR 3103. A guided practice of intermediate-level theory and skills in a multimedia simulation laboratory. $10 laboratory fee. Lecture 1 hour. Laboratory 3 hours equal to one credit hour.

NUR 3606 Theories and Concepts in Nursing II
Spring. Prerequisites: NUR 3204, 3304, 3404, 3502. This course, utilizing the nursing process, builds upon NUR 3204 and includes the bio-psycho-social and spiritual needs of the family. The course emphasizes family development, the childbearing experience, and the child's unique response to the internal and external environment. Lecture 6 hours.

NUR 3703 Nursing Pharmacology
Spring. Prerequisites: NUR 3204, 3304, 3404, 3502. This course focuses on the relationships between the action of drugs, their effects and the contraindications for their administration. The relationship between specific patient needs and the type of drugs that would be effective to meet that need will be analyzed. The nursing care related each type of drug and the rationales for the care will be included. Lecture 3 hours.

NUR(BIOL) 3803 Applied Pathophysiology
Spring. Prerequisites: BIOL 2014 and BIOL 3074. This course focuses on the mechanisms and concepts of selected pathological disturbances in the human body. Emphasis is placed on how the specific pathological condition effects the functioning of the system involved, as well as its impact on all other body systems. Lecture 3 hours.

NUR 3805 Practicum in Nursing II -- Nursing the Family
Spring. Pre- or co-requisites: NUR 3103, 3204, 3304, 3404, 3502, 3606 and 3703. A practicum course which facilitates the integration, synthesis, and application of the theories, concepts, and skills taught in NUR 3103, NUR 3502, NUR 3606 and NUR 3703. 15 clinical hours equal to 5 credit hours.

NUR 4201 RN (Registered Nurse) Seminar
Summer prior to senior year. Prerequisite: RN licensure. This nonclinical course is required only for the returning registered nurse student. It provides the student with the opportunity to expand and improve knowledge in a carefully selected topic of relevance to nursing and/or health care. The course provides the student with a focus on professional nursing concepts and serves as a professional socialization course. General demand will play a part in the topics offered. May be repeated for credit if course content differs. Lecture 1 hour.

NUR 4202 Selected Topics
Prerequisite: Departmental permission. This course is designed to offer a selection of topics which will meet student needs and interests. It can be taken anytime after successful completion of Levels I and II. The course provides the student with the opportunity to expand and improve knowledge in a carefully selected topic of relevance to nursing and/or health care. General demand will play a part in the topics offered. May be repeated for credit if course content differs. Lecture 2 hours.

NUR 4206 Theories and Concepts in Nursing III
Fall. Prerequisite: NUR 3606, 3703, 3805. The course focuses on the prevention of illness, maintenance of health and the restoration of wellness in the care of clients and families experiencing major dysfunctions in adaptation. The nursing process is the methodology used to assist clients and families toward achieving optimal health. Principles of growth and development throughout the life cycle, utilization of research findings, principles of communication in crisis, and the role of the nurse in crises situations are included in the course. Psycho-social theories and concepts relevant to the care of the emotionally disturbed client and family are explored in depth. Lecture 6 hours.

NUR 4303 Nursing Research
Fall. Prerequisite: NUR 3606, 3703, and 3805. An introductory research course which focuses on evaluating the validity and applicability of research findings for nursing practice. Emphasis is on scientific inquiry and the use of research findings to improve the quality of patient care. Lecture 3 hours.

NUR 4405 Practicum in Nursing III -- Nursing Clients in Crisis
Fall. Pre- or co-requisites: NUR 3103, 3304, 3502, 3606, 3703, 3805, 4202, 4206, and 4303. This is a clinical nursing course which provides the opportunity for the integration of theories and concepts in the application of the nursing process in the care of the emotionally and/or physically dysfunctional client, family or group who are undergoing adaptation difficulties due to major deviations from wellness. The health care is delivered according to scientific principles, research findings, and accepted standards of care. Nursing behaviors and nursing roles are emphasized which are appropriate to the level of the students. Learning experiences are gained through caring for clients. 15 clinical hours equal to 5 credit hours. $10 laboratory fee.

NUR 4606 Theories and Concepts in Nursing IV
Spring. Prerequisites: NUR 4202, 4206, 4303, and 4405. The course focuses on the prevention of illness, maintenance of health, and the restoration of wellness of individuals, families, and communities. Concepts of epidemiology, prevention, decision making, and collaboration are utilized to organize and deliver distributive nursing care in complex situations. Theories and techniques of management are studied which relate to self, team members, and care of groups of clients. The emerging role of the professional nurse is explored. Lecture 6 hours.

NUR 4806 Practicum in Nursing IV -- Nursing in the Community
Spring. Pre- or corequisites: NUR 4206, 4303, 4405, and 4606. A clinical course which integrates theories and concepts from all nursing courses and provisions for practice in predominantly distributive healthcare settings. Emphasis is on the utilization of the nursing process, the prevention of illness, maintenance of health, and the restoration of wellness of individuals, families, and communities, experiencing adaptation to complex health problems. Management skills and techniques are utilized in the delivery of holistic nursing care. Activities are provided which facilitate the role transition from student to professional nurse. Clinical experiences occur in a variety of distributive health-care settings. 18 clinical hours equal to 6 credit hours. $10 laboratory fee.

NUR 4991-4 Independent Study
Prerequisites: Departmental permission or NUR 4303. Faculty and student collaborate on the selection, development, and evaluation of an individual project or topic in an area of nursing or health. 15 clock hours per credit hour.

Philosophy

PHIL 2003 Introduction to Philosophy
A survey of basic problems in the major areas of philosophical inquiry-metaphysics, epistemology, ethics, esthetics, and philosophy of religion.

PHIL 2013 Religions of the World
An examination of the major historical religions according to their basic scripture, their historical development, and their contemporary ideas and practices.

PHIL 3003 Ancient Philosophy
An examination of the thought of the leading philosophers of ancient Greece and Rome -- the Pre-Socratics, Socrates, Plato, Aristotle, and representatives of the Stoic and Epicurean traditions.

PHIL 3013 Modern Philosophy
A survey of the history of philosophical thought and its impact upon western civilization from the Renaissance to the twentieth century.

PHIL 3023 Ethics
An introduction to the problems of formulating and validating principle definitive of "the good" in respect to ends, means, and norms of human behavior.

PHIL 3033 Esthetics
An investigation of representative historical theories of beauty, the nature and social significance of art, standards of criticism, and epistemological aspects of the creative process.

PHIL 3053 Philosophy of Religion
A consideration of historical and contemporary studies in religious thought -- basic conceptions of the divine, the human engagement with the divine, and the nature and destiny of man within diverse eschatological perspectives.

PHIL 3063 Modern European Political Theory
Analysis of the leading political theories evolved by mankind pertaining to the state. Emphasis on the view of such thinkers as Machiavelli, Hobbes, Locke, Rousseau, Bentham, Mill, Marx and contemporary theorists.

PHIL 3103 Logic
A study of the principles of deductive reasoning. Topics include immediate inference, the syllogism, truth-functions, natural deduction, quantification, and fallacies.

PHIL 3113 Contemporary Philosophy
A survey of some of the major philosophical trends of the twentieth century.

PHIL 3203 Medieval Philosophy
Historical study of the main philosophical ideas of the period from St. Augustine to the Renaissance.

PHIL 4053 (SOC 4023) Social Philosophy
A study of the historical development of social thought from the earliest times to the present.

PHIL 4093 American Philosophy
An examination of the main currents of American philosophical and religious thought from the earliest times to the present.

PHIL 4103 Advanced Logic
Prerequisite: PHIL 3103. A study of selected topics in advanced logic. Emphasis will be placed on proof theory, quantification theory, semantic tableaux, logicism, theories of completeness and consistency, and some consideration of the logical foundations mathematics.

PHIL 4991-4 Special Problems In Philosophy
A course for minors only. Students are accepted only by invitation of the instructor.

Physical Education

Activities

The activities service program of the Department of Health and Physical Education is designed for the individual who is not majoring in health and physical education. The courses are designed to develop physical skills, physical fitness, and aesthetic value for movement and experience, and to learn the rules and strategy of the activities.

Students enrolled in activity classes must furnish their own clothing for the class. The proper dress attire for the class will be shirts, shorts, and gym shoes. Students enrolled in the swimming classes must furnish their own swim suits. Students enrolled in scuba diving classes will pay an additional $75 fee which is used for equipment rental; students enrolled in bowling classes will pay a $62 bowling fee.

Team and Individual Activities for Women

PE 1051 Volleyball
Designed for beginning volleyball players. The student will learn the fundamental skills, knowledge of the rules, and terminology associated with volleyball.

PE 1411 Badminton
Designed for beginning badminton players. The student will learn the fundamental skills and a knowledge of the rules and terminology associated with badminton.

PE 1481 Tennis
Constructed to aid the beginning tennis player to learn the fundamental skills for tennis. The student will gain a knowledge of the rules and strategy in tennis.

PE 1931 Racquetball
Designed to introduce the rules and strategy of racquetball and development of the basic skills needed to play racquetball successfully.

Coeducational Activities

PE 1101 Folk and Square Dance
Course content will include the origin and factors which influence development of folk and square dance. Basic steps, basic positions, and dance movements will be introduced to the students. May not be taken after completion of PE 3591.

PE 1121 Social Dance
Techniques of leading and following, basic positions, and a variety of dance steps will be introduced throughout the course. May not be taken after completion of PE 3631.

PE 1401 Archery and Recreational Games
The student will learn the fundamental skills in archery, including care and selection of archery tackle. Recreational games will include table tennis, giant volleyball, three-way volleyball, box hockey, pin ball, scooter soccer, variety ball, indoor soccer, and horse shoes.

PE 1431 Bowling
The bowling classes are structured for the beginning bowler. Fundamental skills and general bowling knowledge and etiquette will be introduced to the student. ($62 fee).

PE 1901 Beginning Swimming
This course is designed for students who cannot swim 25 yards on front and 25 yards on back (any form), and/or students who are afraid of water. Introduction to various aquatic activities is included.

PE 1911 Intermediate Swimming
Students who are comfortable in deep water and are able to swim 25 yards on front and 25 yards on back (any form) may enroll in this course. Application of intermediate skills through various forms of aquatic activities is included.

PE 1991 Racquetball
Designed to introduce the rules and strategy of racquetball and develop the basic skills needed to play racquetball successfully

PE 2301 Beginning Golf
Designed for individuals who wish to learn the basic fundamentals in golf. Course includes the fundamentals of the full swing and the fractional swing in golf. It also includes the knowledge of rules and courtesies of golf.

PE 2861 Rhythmic Aerobic Activities
This course will include motor skills put to music, rope jumping, step aerobics, kickboxing, senior fitness, children's fitness, sport aerobics, sculpting, and aerobic dance activities.

PE 2921 Water Safety Instructor
Prerequisite: PE 1911 or equivalent skills. This course is designed to train and certify students as American Red Cross swim instructors.

PE 2932 Lifeguard Training
Prerequisite 1911 or equivalent skills**.** This course is designed to train students as lifeguards.

PE 2941 Scuba Diving I
This course is designed to serve as an introduction to scuba. Course will include classroom work and laboratory (pool) practice. Student must provide mask, snorkel, fins, weight belt, and weights. ($75 fee for use of scuba equipment including tank, regulator, and alternate air source , submersible pressure gauge, depth gauge, underwater compass, buoyancy control device with automatic inflator, and air fills.)

PE 2951 Scuba Diving II
Fall. Prerequisite: Open Water Diver certified or equivalent (see instructor for equivalency). This course will contain the advanced scuba skills set forth by the Professional Association of Diving Instructors (PADI). The course will include techniques for; diving at night, in limited visibility, in deeper waters, and underwater search and light salvage. Field trips (lake dives) are required for certification as an Advanced Open Water Diver. Students must provide all equipment. (See instructor for equipment list). ($50 fee includes certification processing and open water training.)

Team and Individual Activities for Men

PE 1581 Tennis
Designed to provide for the development of tennis ball hitting skills for accuracy as well as the knowledge of rules and strategies typical of those who play and enjoy the game.

PE 1841 Racquetball
Designed to introduce the rules and strategy of racquetball and develop the basic skills needed to play racquetball successfully.

PE 1851 Tennis and Basketball
Designed for the average student. Fundamentals in basketball and tennis will be introduced along with knowledge of the rules and strategies of play.

Academic Courses for Physical Education

PE 1201 Orientation to Health, Physical Education, and Wellness Science
This course provides an introduction to the HPE/WS curriculum, as it affects the student. Emphasis will be given to resources, services and opportunities available to the student through the University, which will help him or her grow as a professional.

PE 2101 Methods of Teaching Team Activities
This course is designed to assist in preparing students to teach three team sports: soccer, softball and volleyball. Emphasis will be placed on various teaching methods and strategies for the sequencing of skills, the presentation of skills, skill drill, methods of evaluation, and game situations for teaching large groups.

PE 2111 Methods of Teaching Individual Activities
Tennis, Badminton, and a variety of recreational and leisure activities. This course is designed to assist in preparing students to teach a variety of individual and dual activity units. Emphasis will be placed on various teaching methods and strategies for the sequencing of skills, the presentation of skills, skills drills, methods of evaluation, and game situations for teaching large groups.

PE 2513 First Aid
Each semester. Standard and advanced course in first aid. This course includes CPR instruction.

PE 2523 Foundations in Health and Physical Education
Fall semester. A study of history, philosophy, and principles of health and physical education in grades K-12 as applied to each area.

PE 2653 Anatomy and Physiology
Prerequisite: BIOL 1014 or permission of instructor. The structure and function of the human body with emphasis on the bodily systems important to teachers and practitioners of wellness, fitness, and physical education.

PE 3051 Methods of Teaching Fitness and Wellness Concepts
This course is designed to provide the student with knowledge needed to implement a sound fitness and wellness program that will yield the desired results. The emphasis is on teaching students how to take control of their own personal health and lifestyle habits so that they can make a deliberate effort to stay healthy and achieve the highest potential for well-being.

PE 3101 Methods of Teaching Rhythmic and Gymnastic Movements
Methods and activities to develop rhythm, folk dance, and gymnastic skills related to teaching physical education. Laboratory two hours.

PE 3103 Methods of Teaching Movement Patterns and Activities for Children
Prerequisite: Admission to Stage II or permission of instructor. Methods and activities to develop basic movement patterns, primary and lead-up game skills, and knowledge related to teaching elementary physical education. Lecture one hour, laboratory four hours.

PE 3413 Coaching Theory
The course exposes students to the theory of coaching, relevant to athletics. Emphasis is placed on organization, management, and content involved in coaching a variety of sports.

PE 3512 Coaching Strategies: Football & Baseball
Principles of coaching football and baseball, including off-season training programs, team organization, offense, defense, scouting, and use of visual aids. One hour lecture and one hour laboratory.

PE 3522 Coaching Strategies: Basketball & Track and Field
Principles of in-season and off-season training programs and team organization for track and field. Additionally, the course is designed to provide a systematic process for teaching basketball skill development and team strategies. Emphasis on fundamental skills and drills, rules and evolution of the game, offensive and defensive strategies used by various successful coaches are introduced. Extensive use of floor demonstrations and video presentations enhance the course content. One hour lecture and one hour laboratory.

PE 3532 Coaching Strategies: Softball and Volleyball
This course will offer information relative to the following topics for both volleyball and softball: in-season and off-season training programs, team organization, offense, defense, special situations, scouting, and use of visual aids. One hour lecture and one hour laboratory.

PE 3573 Prevention and Care of Athletic Injuries
Fall. Prerequisites: PE 2653, 3663. Development of techniques in prevention and treatment of athletic injuries.

PE 3583 Methods and Materials in Physical Education and Recreation for Kindergarten and Elementary Grades
Prerequisite: PE 3103. Each semester. Methods, materials, supervision, school problems, rhythmical activities, movements exploration, and group games for kindergarten and elementary teachers. Lecture two hours, laboratory two hours.

PE 3603 Methods and Materials in Physical Education for Secondary Schools
A course in program planning and techniques of teaching physical education in the secondary schools, critical analysis of methods now in use in physical education, and criteria for evaluation of programs. Lecture two hours, laboratory two hours.

PE 3661 Laboratory Experiences in Anatomy/ Physiology and Kinesiology
Prerequisite: PE 2653 or permission of department head. The laboratory experience supplements Anatomy/ Physiology and Kinesiology by providing practical experiences which enable students to bridge the gap between theory and practice.

PE 3663 Kinesiology
Prerequisite: PE 2653. Study of human movement and the physical and physiological principles upon which it depends. Body mechanics, posture, motor efficiency and the influence of growth and development upon motor performance.

PE 3711 Athletic Training Practicum I
Prerequisite: Consent of instructor. Supervised laboratory experience in athletic training. Specifically designed to assist students in understanding the assessment and evaluation of sports-related injuries.

PE 3721 Athletic Training Practicum II
Prerequisite: PE 3711. Supervised laboratory experience in athletic training. Specifically designed to teach students the proper selection and operation of therapeutic modalities in the treatment of common athletic injuries.

PE 4033 Basic Exercise Physiology
Prerequisites: PE 2653, 3663, and 3661, or permission of the instructor. Introduction to the basic effects of exercise on physiology of the systems of the body, and the principles of exercise prescriptions and programs.

PE 4103 Principles and Methods of Adapted Physical Education
Principles and methods of teaching special students with various types of physical and mental disabilities which require adapting the learning process. May not be repeated for credit as PE 5103 or equivalent.

PE 4513 Organization and Administration of Health and Physical Education
Spring. Organization and administration problems in grades K-12 to be treated as a single administrative unit.

PE 4523 Measurement and Evaluation in Health and Physical Education
Fall. Research methods, measurement, and evaluation in health, physical education, and recreation with an analysis of their practical application.

PE 4701 Special Methods in Health and Physical Education
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4909. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching health and physical education.

PE 4703 Advanced Athletic Training Techniques
Prerequisites: PE 3711, 3721, 4711, 4721, 2653, 3663, and 3661. Development of advanced techniques in all areas of athletic training, including evaluation, treatment and rehabilitation, and emergency procedures.

PE 4711 Athletic Training Practicum III
Prerequisite: PE 3711 & PE 3721. Supervised laboratory experience in athletic training. Specifically designed to teach students the theory and practical application of rehabilitation techniques in the sports medicine environment.

PE 4721 Athletic Training Practicum IV
Prerequisites: PE 3711, PE 3721, & PE 4711. Supervised laboratory experience in athletic training. Specifically designed to prepare students in the administration and organization aspects of athletic training.

PE 4991-4 Special Problems in Health and Physical Education
Prerequisite: PE 4523. Open to physical education majors and minors of outstanding ability Course content will include readings and research and the setting up and carrying out of a piece of research which will include review of literature, the problem, and conclusion.

Physical Science

PHSC 1001 Orientation to Physical Science
Introduction to vital university affairs, departmental opportunities and curriculum, professions in physical sciences, and employment opportunities found in physical sciences. The course will also focus on helping the student develop study skills, career goals, practical experience in the use of library reference and research materials, and understanding the policies and information needed to enjoy a successful college career. All students majoring in programs within the Physical Sciences department are strongly encouraged to take this course during their first fall semester on the Arkansas Tech University campus. Lecture one hour.

PHSC(BIOL) 1004 Principles of Environmental Science
This course is designed to bring the student to a basic but informed awareness of and responsible behavior toward our environment and the role of the human race therein. The content will include a study of the philosophical and scientific basis for the study of ecosystems and the environment, the nature of ecosystems, the techniques used to study the environment, the origin and development of current environmental problems, the interdisciplinary nature of environmental studies, the processes of critical thinking and problem solving, and the moral and ethical implications of environmentally-mandated decisions. Lecture three hours, Lab three hours. $10 laboratory fee.

PHSC 1013 Introduction to Physical Science
Each semester. Prerequisite: A score of 19 or above on the mathematics section of the Enhanced ACT or completion of MATH 0903, Intermediate Algebra, with a grade of "C" or better. An introduction to the natural laws governing the physical world, with emphasis upon the discovery and development of these laws and their effect upon man. Specific topics are selected from disciplines of physics, chemistry, astronomy, geology, and meteorology. May not be taken for credit after completion of two laboratory courses in the physical science disciplines. Lecture three hours.

PHSC 1021 Physical Science Laboratory
Each semester. To be taken concurrent with or following completion of PHSC 1013. An introduction to laboratory experiences in the physical sciences, including physics, chemistry, earth sciences, and astronomy. Laboratory two hours. $10 laboratory fee.

PHSC 1051 Observational Astronomy Laboratory
Upon demand. Corequisite: MATH 1103 or MATH 1113; Corequisite: PHSC 1053 or consent of instructor. An introduction to astronomical observations and techniques. Students will have the opportunity to use telescopes at the ATU astronomical observatory (weather permitting) to make observations and collect scientific data for analysis. This course includes telescope orientation, constellation recognition, identifying celestial objects, and interpreting astronomical data. When taken concurrently with PHSC 1053, this course satisfies the general education physical science laboratory requirement upon successful completion of both courses. Course PHSC 1051 will run simultaneously with PHSC 3051 and duplicate credit will not be allowed. Credit for PHSC 3051 requires completion of an observational research project for upper division students, but is not required of students enrolled in PHSC 1051. Laboratory 3 hours; 1 credit hour. $10 laboratory fee.

PHSC 1053 Astronomy
Upon demand. Corequisite: MATH 1103 or MATH 1113 or equivalent or consent of instructor; Optional corequisite; PHSC 1051. A study of our universe; constellations, celestial motions, tools and methods of astronomical observations, the solar system, properties of stars and the interstellar medium, the birth, life and death of stars, our Milky Way galaxy, dynamics of stellar systems and other galaxies, and cosmology. When taken concurrently with PHSC 1051, satisfies general education physical science laboratory requirement upon successful completion of both courses. Course PHSC 1053 will run simultaneously with PHSC 3053 and duplicate credit will not be allowed. Credit for PHSC 3053 requires completion of several assignments, a term paper and a research project for upper division students, but is not required of students enrolled in PHSC 1053. Lecture three hours

PHSC(BIOL) 3003 Science in Elementary and Middle School Education
Each semester. Prerequisites: Junior standing. Materials, methods, and procedures of teaching modern elementary science. Includes the development of invitations to inquiry in science and the application of modern science curriculum in the elementary and middle schools. Lecture three hours.

PHSC(BIOL) 3013 Science Education in the Secondary School
Fall. Prerequisites: CHEM 2124, PHYS 2014 and 2024, and BIOL 1114, 1124 and 1134. A course outlining methods, materials, and procedures for secondary science education. Curriculum development and planning skills utilizing various instructional media and methods are emphasized. Design and execution of learning activities for a secondary school setting are required. Lecture three hours. $10 laboratory fee.

PHSC 3033 Meteorology
Prerequisite: PHSC 1013 or PHYS 2014 or CHEM 1114 or CHEM 2124. A study of the weather, the physics of the atmosphere, and associated phenomena. Lecture three hours.

PHSC 3051 Observational Astronomy Laboratory
Upon demand. Prerequisite: MATH 1113; Corequisite: PHSC 3053 or consent of instructor. An introduction to astronomical observations and techniques. Students will have the opportunity to use telescopes at the ATU astronomical observatory (weather permitting) to make observations and collect scientific data for analysis. This course includes telescope orientation, constellation recognition, identifying celestial objects, and interpreting astronomical data. When taken concurrently with PHSC 3053, this course satisfies the general education physical science laboratory requirement upon successful completion of both courses. Credit for PHSC 3051 requires completion of an observational research project for upper division students. Laboratory 3 hours; 1 credit hour. $10 laboratory fee.

PHSC 3053 Astronomy
Upon demand. Prerequisite: MATH 1113; Optional corequisite; PHSC 3051 or consent of instructor. A study of our universe; constellations, celestial motions, tools and methods of astronomical observations, the solar system, properties of stars and the interstellar medium, the birth, life and death of stars, our Milky Way galaxy, dynamics of stellar systems and other galaxies, and cosmology. When taken concurrently with PHSC 3051, satisfies general education physical science laboratory requirement upon successful completion of both courses. Credit for PHSC 3053 requires completion of a term paper and a research project for upper division students. Duplicate credit for previously offered PHSC 3043 is not allowed. Lecture three hours.

PHSC(BIOL) 4003 History and Philosophy of Science
Summer, even years. A course in the historical development and philosophical basis of modern science. May not be repeated for credit as PHSC (BIOL) 5003 or equivalent, Lecture two hours.

PHSC 4701 Special Methods in Physical Science
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4909. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching physical science.

Physics

PHYS 1114 Applied Physics
Fall. A survey of selected topics in physics. The "scientific method", mechanics, fluid mechanics, heat, electricity, sound, light, and nuclear radiation will be studied. May not be taken for credit after completion of PHYS 2014, PHYS 2024, PHYS 2114, or PHYS 2124. Lecture three hours, laboratory three hours. $10 laboratory fee.

PHYS 2014 Physical Principles I
Fall, and summer (upon demand). Prerequisite: A grade of C or better in MATH 1113 or consent of the instructor. Open to freshmen. A broad survey course emphasizing the understanding of the principles of physics necessary for students not specifically interested in advanced work in physics, chemistry or engineering. Topics include mechanics, heat, sound, wave motion, and fluid mechanics. Lecture three hours, laboratory three hours. $10 laboratory fee.

PHYS 2024 Physical Principles II
Spring, and summer (upon demand). Prerequisite: PHYS 2014 or permission of instructor. Continuation of PHYS 2014, covering electricity and magnetism, light, relativity, particle physics, and quantum effects. Lecture three hours, laboratory three hours. $10 laboratory fee.

PHYS 2114 General Physics I
Fall. Pre- or co-requisite: MATH 2924. Introductory mechanics, heat and thermodynamics, kinetic theory, and sound. Lecture three hours, laboratory three hours. $10 laboratory fee.

PHYS 2124 General Physics II
Spring. Prerequisite: Permission of instructor; pre- or corequisite: MATH 2934. Introductory electricity and magnetism, wave motion, physical and geometrical optics, elementary quantum concepts. Lecture three hours, laboratory three hours. $10 laboratory fee.

PHYS 3001, 3011 (PHYS 4001, 4011) Colloquium
Upon demand. Prerequisite: Junior standing. Attendance required of students interested in physics concentration. Discussion of advanced topics in current physical theory. Student presentations are required. Lecture-discussion one hour.

PHYS 3003 Optics
Upon demand. Prerequisite: PHYS 2124 or consent of instructor. Introduction to geometrical and physical optics. Lecture two hours, laboratory two hours. $10 laboratory fee.

PHYS 3023 Mechanics
Upon demand. Prerequisite: PHYS 2114. Co-requisite: MATH 3243. The conservation laws. Euler's angles. Lagrange's and Hamilton's equations. Lecture three hours.

PHYS 3033 (ENGR 3523) Radiation Health Physics
Upon demand. Prerequisites: PHSC 1013, PHYS 2014 or CHEM 2124. Theory and exercises in radiological monitoring techniques, neutron activation analysis, and environmental effects of nuclear reactors. Lecture three hours.

PHYS 3133 Theory of Electricity and Magnetism
Upon demand. Prerequisite: PHYS 2124. Gauss's law, potential, Laplace's and Poisson's equations in rectangular, cylindrical, and spherical coordinates, inductance, capacitance, moving charges, dielectric phenomena; Maxwell's equations. Lecture three hours.

PHYS 3143 (ENGR 3103) Electronics
Upon demand. Prerequisite: PHYS 2124 or ENGR 3104. Amplifiers, power supplies, oscillators, trigger circuits, modulation, and demodulation. Intended to acquaint students with the working principles of the equipment they will use as a physicist. Lecture two hours, laboratory three hours. $10 laboratory fee.

PHYS 3153 Solid State Physics
Upon demand. Prerequisites: PHYS 2114, 2124; CHEM 2124. Corequisite: MATH 3243. An introduction to the physics governing the crystalline state of matter. Modern theories describing lattice vibrations, energy bands, crystal binding, and optical properties are presented. These ideas are then applied to the understanding of technologically important areas such as superconductivity, doped semiconductors, ferroelectric materials, and photorefractivity. Lecture 3 hours.

PHYS 3213 Modern Physics
Upon demand. Prerequisite: Phys 2124. Corequisite: MATH 3243. Introduction to relativity, wave-particle interactions, atomic structure, quantum mechanics, quantum theory of the hydrogen atom, statistical mechanics, nuclear structure, and elementary particles. Lecture 3 hours.

PHYS 3991-3 Special Problems in Physics and Astronomy
Upon demand. Requires departmental approval. Advanced students carry out independent research activity relating to significant problems in physics and astronomy. Supervised by faculty member. Formal report and presentation required. One to three credits depending on problem selected and effort made.

PHYS 4001, 4011 (PHYS 3001, 3011) Colloquium
Upon demand, Prerequisite: Junior standing. Attendance required of students interested in physics concentration. Discussion of advanced topics in current physical theory. Student presentations are required. Lecture-discussion one hour.

PHYS 4003 Thermodynamics and Statistical Mechanics
Upon demand. Prerequisite: PHYS 2124, Pre- or corequisite: MATH 3243. Applications of the three laws of thermodynamics, partition-functions and transport phenomena. Lecture three hours.

PHYS 4013 Quantum Mechanics
Upon demand. Prerequisites: PHYS 3213 and MATH 3243, A formal course in wave and matrix mechanics, designed to enable a student to set up and solve the elementary practical problems of quantum mechanics. Lecture three hours.

PHYS 4113 Advanced Physics Laboratory
Upon demand. Prerequisite: PHYS 3003; Corequisite: 3133, 4013. An application and investigation of advanced physical topics in the laboratory. Techniques of experimental [engineering] physics, such as computerized instrumentation, vacuum technology, optics, and electron optics will be applied to investigate various areas of advanced physics. Proper data reduction and analysis will be used to yield meaningful measurements. Intended as a culminating course, previous course work is applied to solve problems in the laboratory. Lecture 1 hour, Lab 5 hours. $10 laboratory fee.

PHYS 4213 Advanced Topics in Physics and Astronomy
Upon demand. Prerequisite: PHYS 2114, PHYS 2124. Corequisite: MATH 3243. Introduction to relativity, elementary particle physics, quantum dynamics, big-bang cosmology, atomic nucleosynthesis, and large scale structure and exotic states of matter such as black holes. Forces and interactions between the building blocks of matter in addition to cosmological models will be studied to gain insight into the complex universe we observe today. Lecture two hours, laboratory two hours. $10 laboratory fee.

PHYS 4991-4 Special Problems in Physics and Astronomy
Upon demand. Requires departmental approval. Advanced students carry out independent research activity relating to significant problems in physics and astronomy. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

Political Science

POLS 2003 American Government
Each semester. A study of the principles and practices of American Government, explaining the origin and purpose of our governmental institutions in a broad sense, with consideration given to interstate and national state relations.

POLS 2013 Introduction to Political Science
The basic terms and concepts for the study of political science, including an understanding of democratic and authoritarian political systems and the methods for researching and writing a political science paper. This course is highly recommended for all students interested in political science.

POLS 2421, 2431, 3421 Model United Nations Workshop
Each semester (spring semester enrollment by invitation only). Prerequisite: POLS 3433. Participation in the state or regional Model United Nations. Only one of these courses may be taken for credit during a semester. POLS 3421 may be repeated for credit three times.

POLS 3013 Recent American Foreign and Military Policy
Prerequisites: POLS 2013 and 3413 recommended. The post World War II environment in which U.S. foreign and military policy functions; emphasis is on the formulation of policy, relationship of foreign policy and domestic affairs, problems of foreign and military policy coordination and control, and the military-industrial complex.

POLS(CJ) 3023 Judicial Process
The structure and operation of the state and national court systems. Emphasis upon the role of the criminal courts in the political system and the consequences of judicial policy making.

POLS 3033 American State and Local Government
A comparative study of the nature of the organization and operation of state and local governments in the United States with emphasis on state and local government in Arkansas.

POLS 3053 Introduction to Public Administration
A study of public administration with attention devoted to organizational problems and pathology, leadership, communication, control, and the hiring, training, compensating, motivating, and firing of personnel. Numerous case studies are considered.

POLS 3083 Political Parties and Elections
Prerequisite: POLS 2013. A study of American political parties, with stress on such topics as the electorate and public opinion, nature and history of parties, party organizations, nominations, and elections.

POLS 3093 American Municipal Government
A comparative study of the structure, functions, politics, and problems of urban, suburban, and metropolitan governments in the United States, with emphasis on municipal governments in Arkansas.

POLS 3403 Comparative Government
Prerequisite: POLS 2013 recommended. A study of various political systems of the world, such as the governments of Western Europe, socialist or communist systems, and developing world governments. The focus of this course is often adjusted to deal with real world circumstances.

POLS 3413 International Relations
Prerequisite: POLS 2013 recommended. A study of the theory and practice of international politics, with special emphasis upon decision making, policy making, the state system, war and arms control, ideology and nationalism, the ecological system, interdependence, the multinationals, and human rights.

POLS 3433 United Nations
Fall. Study of the organization and functioning of the United Nations, significant problems confronting world organization, weaknesses of the UN, and the future of world organization. Students will conduct research and write papers on significant international issues confronting the UN and on the foreign policy of selected members of the UN. Students will participate each week in a mock session of the UN and will attend, at their own expense, the annual session of the Arkansas Model United Nations, which normally meets on Friday and Saturday of the first week in December. Only one Model United Nations course may be taken for credit during a semester Course offered in fall semester only.

POLS 3443 Soviet Successor States and East European Politics
Prerequisite: POLS 2013 recommended. A survey of the government, politics, society, and foreign policy of the former republics of the Soviet Union and Eastern Europe, with an emphasis on current issues.

POLS 3473 National Security Policy
Prerequisite: POLS 2013 and 3013 recommended. A study of national security policy making, with an emphasis on current national security issues.

POLS(HIST) 4043 American Constitutional Law to 1941
Development and application of the great constitutional principles by the Supreme Court in the evolution of American government as seen in the leading cases dealing with judicial review, separation of powers, and federal systems; protection of personal rights, interstate commerce, taxation, and due process of law in economic regulation and control.

POLS(CJ) 4063 American Constitutional Law 1941-Present: Civil Liberties and Civil Rights
A comprehensive study of the United States Supreme Court's decisions on civil liberties and civil rights from 1941 to the present. Emphasis will be on the constitutional questions raised in these court cases and their impact on the fundamental freedoms of the Fourteenth Amendment and Bill of Rights.

POLS 4103 Environmental Politics
Prerequisite: POLS 2013 recommended. An examination of environmental issues from a policy perspective. Although scientific questions are involved, emphasis is on the political process of environmental issues. Topics discussed include the actors, their power, limits to their power, and their impact on the environmental policy process. May not be taken after completion of POLS 5103 or equivalent.

POLS(HIST) 4113 American Racial and Cultural Minorities
A study of the role of racial and cultural minorities in America and the interrelationship of these minorities with American society from Colonial times to the present with emphasis on Native Americans, African-Americans, and Mexican-Americans. May not be taken for credit after completion of HIST 5113 or equivalent.

POLS 4403 Current Issues in Global Politics
Prerequisite: POLS 2013 and 3413 recommended. Contemporary issues in global politics studied through participation in ICONS, an international intercollegiate computer simulation network. One country (past countries include Sweden and the United Kingdom) will be studied in depth as a vantage point from which to assess global affairs. May not be taken after completion of POLS 5403 or equivalent.

POLS 4963 Senior Seminar
A required course for senior History and Political Science majors. Course content will cover a directed seminar in a specified area of Political Science. Research techniques will be emphasized.

POLS(HIST) 4981-3 Social Sciences Seminar
A directed seminar in an area of social sciences. The specific focus will depend upon research underway, community or student need, and the unique educational opportunity available. This course may be repeated for credit if course content differs.

POLS 4991-4 Special Problems in Political Science
A course for majors and minors only. Admission requires consent of department head.

Psychology

PSY 2003 General Psychology
An introduction to basic concepts in the study of behavior and to elementary principles of genetics, individual differences, motivation, emotion, personality, sensation, and perception.

PSY 2023 Consumer Psychology
An introduction to the application of psychological principles to the study of the acts of individuals involved in obtaining and using economic goods and services, including the decision-making processes that precede and determine these acts. Emphasis is placed on the role of perception, learning, personality, and attitude change.

PSY 2033 Psychology of Adjustment
A course to provide a broad introduction to psychology as applied to human behavior. Focus is on the theoretical and experimental issues underlying the development and function of mental and emotional states. Emphasis is on normal functioning.

PSY(SOC) 2053 Statistics for the Behavioral Sciences
Prerequisites: MATH 1103 and PSY 2003 or SOC 1003, or consent. An introduction to descriptive and inferential statistical methods pertinent to behavioral sciences research, including correlation, sampling distributions, t-tests, chi square and analysis of variance. Emphasis is upon the logical and applied aspects.

PSY 2074 Experimental Psychology
Prerequisite: PSY 2003 and 2053. A study of research methods in psychology. Emphasis is placed upon developing skills in data gathering and analysis, report writing and application of basic research strategies. Three hours lecture, two hours laboratory per week.

PSY 3003 Abnormal Psychology
Prerequisite: PSY 2003. Emphasis will be placed upon the etiology, symptoms, and treatment of the neuroses, psychoses, and personality disorders.

PSY/SOC 3013 Psychosocial Aspects of Death and Dying
Prerequisite: Upper division standing. This course studies the psychosocial and sociological aspects of death. The course will provide a basic insight into the dynamics surrounding death from the individual and societal level, its impact on survivors, and the effect death has on the living. This course cannot be taken for credit after completion of PSY 4003.

PSY(BIOL) 3023 Animal Behavior
The comparative study of animal behavior utilizing the phylogenetic adaptations which determine the behavior of animals in a definable manner and based on the assumption that predictions about behavior can be made if a sufficient number of relative variables is known. Lecture two hours, laboratory two hours. $10 laboratory fee.

PSY(CJ) 3033 The Criminal Mind
Prerequisite: PSY 2003 and CJ 2003 or SOC 3043. The course familiarizes students with various models, theories, and research regarding criminality from a psychological perspective. Genetic, constitutional, and biological factors will be emphasized, and some practical applications to dealing with criminals will be considered.

PSY 3043 Environmental Psychology
Prerequisite: PSY 2003. This course is designed to provide students with information on the reciprocal relationship between humans and their environment, both natural and man-made. Major topics to be considered include (but are not limited to) the following: noise, pollution, temperature, density, architectural influences on human behavior, cognitive mapping, and crowding.

PSY 3053 Physiological Psychology
Prerequisites: PSY 2003, BIOL 1124, or BIOL 1014. An introduction to the physiological correlates of behavior, with emphasis upon the nervous system.

PSY 3063 Developmental Psychology I
Prerequisite: PSY 2003. A study of how the maturation process affects an individual's physical and psychological state from conception through adolescence. Representative topics include (but not limited to) genetic influences, child cognitive processes, moral reasoning, and testing.

PSY 3073 Psychology of Learning
Prerequisite: Twelve hours of psychology. An introduction to the basic processes in learning and conditioning, including human and animal experimental findings. Emphasis will be placed on conditioning paradigms, reinforcement principles, memory functions and their use in behavior change.

PSY 3093 Industrial Psychology
Prerequisite: PSY 2003. A survey of psychological applications in industrial settings with emphasis upon selection, placement, and training techniques; organizational theory; and decision-making processes.

PSY 3141-4 Seminar in Psychology
A directed seminar in an area of psychology. The specific focus will depend upon research underway, student need, and current developments in the field of psychology. May be repeated for credit if course content differs.

PSY 3153 Theories of Personality
Prerequisite: Six hours of psychology. An introduction to the various theoretical viewpoints of the normal personality structure and its development.

PSY 3163 Developmental Psychology II
Prerequisite: PSY 2003. The study of how the maturation process affects an individual's physical and psychological state from adolescence through old age. Representative topics include (but not limited to) early, middle, and late adulthood biological, psychosocial and cognitive development.

PSY 4013 History of Psychology
Prerequisite: PSY 2003. A survey of the developments in psychology from the ancient Greeks to the emergence of psychology as a modern experimental science.

PSY 4033 Psychological Tests and Measurements
Prerequisites: Twelve hours of psychology, PSY 2053. Theory of psychological testing, statistical procedures, and training in administration, scoring and profiling of various tests of ability, achievement, interests, and personality.

PSY 4043 Social Psychology
Prerequisite: Psy 2053 and Psy 2074 or permission. The study of how individuals are influenced by the actual or implied presence of other persons. Emphasis is placed on attitudes, social cognition, social influence, aggression, altruism, self and other perception.

PSY 4053 Psychology of Perception
Prerequisite: Nine hours of psychology or consent. The study of general perceptual process. While the main senses will be covered, emphasis will be placed on visual functioning. The role of perception in organismic adaptation will be explored.

PSY 4234 Field Placement
Prerequisites: PSY 2023 or 3093, and PSY 2053, 2074 (or comparable), senior major, and mutual consent of advisor, supervising faculty and industry supervisor. This course is a jointly supervised field placement in an area business or industry. Emphasis is placed on integration of theory and classroom work with on-the-job experience. The placement is designed for students who are considering work in the area of industrial/organizational or consumer psychology. The purchase of professional liability insurance is required.

PSY 4991-4 Special Problems in Psychology
Prerequisite: Eighteen hours of psychology and prior permission of instructor. Independent work under individual guidance of a faculty member.

Reading

READ 0103 College Reading Skills
A course designed to develop reading skills through perception training, vocabulary building, comprehension training, and active listening exercises. Individual diagnosis and prescription is emphasized. The grade in the course will be computed in semester and cumulative grade point averages, but the course may not be used to satisfy general education requirements nor provide credit toward any degree. A student who is placed in READ 0103 must repeat the course until he or she earns a grade of "C" or better. A student who makes a "D" or "F" in READ 0103 must repeat the course in each subsequent semester until he or she earns a grade of "C" or better.

Recreation and Park Administration

Coeducational Activities

(May be taken for General Education credit)

RP 1002 Backpacking
This course is an introduction to basic backpacking skills, equipment, food, and backcountry travel. Day hikes and overnight hikes. Students will need to provide own personal equipment (backpack, sleeping bag, etc.) And be willing to share tents, stoves, cooking gear, etc. with other students in the course. Some students may need to borrow or purchase such gear depending on the equipment owned by members of the class.

RP 1011 Sport Hunting
An introduction to the fundamentals of sport hunting, materials, and personal skills. Emphasis on state game laws, personal equipment and techniques in its usage, game species and their natural habitats, and firearm safety. Arkansas Hunter Safety certification awarded with successful completion.

RP 1022 Boating Education
This course will take students through the Arkansas Game and Fish Commission Boating Guide. Those who successfully complete the course will be awarded Boating Safety Certification. A variety of audio-visual presentations will be used, and participation in one weekend day of actual boating experience is required. Certification is awarded upon completion.

RP 1031 Introduction to Mountain Biking
Introduction to Mountain Biking is designed to introduce the beginning mountain biker to the basics needed for lifelong enjoyment of this recreational activity and sport. Emphasis on choosing equipment, maintenance, and riding skills. Riding opportunities at area trails and classroom instruction. Participants provide own transportation, bikes, and associated gear and equipment.

RP 1051 Fundamentals of Canoeing
Prerequisites: All students must be able to enter deep water (over their head) and float, swim or tread water for two minutes, fully clothed. An introduction to the fundamentals of canoeing. The course will focus on safety and accident prevention in canoeing through training in basic skills and familiarization with equipment and proper procedures. The history of canoeing, applicable riparian law, and the use of canoes in camping, fishing, sailing, and competitive sports will be included. Certified by the American Red Cross. Fee required.

RP 1061 Basic River Canoeing
Prerequisite: Certification in RP 1051 or equivalent certification. An introduction to river canoeing and white-water sports. The course focus will be on techniques and equipment utilized in safe white-water sports. Involves one overnight canoe camping trip plus several day trips to Class I through III rivers in this area. Certified by the American Red Cross. Equipment fee required.

Academic Courses

RP(HA) 1001 Orientation to Parks, Recreation, and Hospitality Administration
Orientation to the Parks, Recreation and Hospitality professions. An overview of the career opportunities in various Park, Recreation and Hospitality agencies and industries. Weekly speakers from PRHA agencies, industry and education will provide information on current issues in their professional areas of expertise.

RP 1013 Principles of Recreation and Park Administration
A study of the history of the recreation and park profession and the basic sociological and ecological intermix of contemporary recreation and park services.

RP 1992 Basic Forest Firefighting
Physical fitness standards as required by the U.S. Forest Service. The course will consist of U.S. Forest Service Basic Firefighting S-190 and S-130, utilizing classroom theory and weekend laboratory exercises which will enable successful candidates to obtain the "Red Card" recognized by most federal and many state firefighting agencies. Instruction will be by U. S. Forest Service certified instructors and RP faculty.

RP 2003 Recreation Programming
Recreation program planning, supervision, and evaluation. This course examines the theory, principles, and leadership techniques of programming for individuals and groups in a variety of recreation settings, including the community, institutions, and camps. May not be taken for credit after completion of RP 2002 and RP 2012.

RP 2013 Landscape Materials and Construction
Use of plant and construction materials and their application to environmental design, including a study of identification and effectiveness through texture, density, color, and relationship to structures and site development.

RP 2992 Wildland Fire Suppression-Water Use
Prerequisite: RP 1992 or U.S. Forest Service Training Courses S-130 and S-190. A study of water use for wildland fire suppression including supply sources, delivery methods, application techniques, hydraulics, and equipment maintenance. Field exercises on weekends required with materials and equipment furnished.

RP 3013 Recreation for Special Populations
Development of an understanding of disabled sub-populations and its relationship to recreation programming and administration for agencies at the local, state, and federal level of responsibilities.

RP 3023 Camp Administration
Prerequisite: Junior standing. Theory and principles of camp administration, programming, leadership, and supervision in public, private, and school camps. Field trips, school camp.

RP 3033 Commercial Recreation
An introduction to the spectrum of private planning, delivery and assessment of goods and services in the commercial sector of recreation.

RP 3034 Site Planning and Design
Fundamentals of the site planning process and application to park and recreation development, including consideration of factors both external (user preferences) and internal to the site (function, organization and aesthetic treatment). Emphasis on resource capabilities and potentials. Lecture two hours, laboratory four hours.

RP(HA) 3043 Work Experiences I
Fall, spring or summer. By permission. Supervised field application of class skills and knowledge in Parks, Recreation and Hospitality work situations. Students are given the opportunity to take part in meaningful management and work experiences in actual work situations under the supervision of both university faculty and professionals in the field. Minimum of 80 clock hours of work experience. Lecture one hour, laboratory four hours.

RP 3053 Natural Resource Management and Planning
Study of the economic, social, political, and physical factors of the natural environment and methods to guide, direct, and influence orderly growth and development.

RP(ELED) 3063 Outdoor Education
The historical development of outdoor education in America. Educational theory, practice and significance. Detailed analysis of typology, organization, administration and program planning for school outdoor-education programs. Field trips, school camp.

RP 3093 Interpretive Methods
By permission. An analysis of various interpretive techniques, interpretive planning, and utilizing interpretation to obtain management goals. Preparation of an interpretive program with various audio-visual equipment.

RP 3773 Sports Facilities Planning and Design (formerly Golf Course Planning & Design)
Fall. Introduction to the planning and design concepts necessary for the development, management, and maintenance of sports facilities. Emphasis will include design considerations (as dictated by a particular sport), environmental issues (in both the design and development phases), overall maintenance management of the facility (to include turf usage and equipment), as well as other timely or pertinent factors that might arise. Lecture 1 hour, Lab 2 hours.

RP 3783 Turfgrass Management: Basic Chemical Usage
Spring. Prerequisite: CHEM 1114. Introduction to Arkansas Pest Control law: definitions, requirements and exceptions. Pesticide labeling, formulation, application and storage discussed.

RP 3993 Advanced Firefighting-Wildland/Urban Interface
Prerequisites: RP 1992 and RP 2992 or permission by experience. Advanced study of organization, deployment, and techniques of fire suppression applicable to wildfires affecting residences, outbuildings, and other human-structure barriers in remote areas and outlying suburban locales. Particular emphasis on wildland structure and urban interface fire suppression problems. Weekend field exercises required.

RP(HA) 4001 Internship Preparation
Prerequisites: PRHA major, senior standing, two semesters prior to internship, and completion of RP/HA 3043 (if required for major) or permission of department head. Preparation for the internship experience.

RP 4013 Recreation and Park Administration
Prerequisite: Six hours of RP courses. A study of the administrative process of planning, organizing, staffing, directing, evaluating, budgeting, and coordinating of recreation and park agencies. Special emphasis on budget, personnel, and supervisory practices of the decision-maker mechanisms.

RP 4023 Research Methods
Prerequisite: Twelve hours of RP courses. An introduction to the spirit and theory of research. The scientific method and application to the recreation and parks profession. Methods of problem identification, statement of testable hypothesis, design, summation of findings, research reporting, and writings will be examined.

RP 4033 Tourism Planning
An examination of the tourism planning process and techniques. Topics include the examination of tourism as a system, levels of planning, environmental, cultural and economic components, attractions, transportation, infrastructure and marketing.

RP 4042 Field Seminar in Interpretive Methods
This off-campus course will be of one-week duration conducted at recreation and park facilities in Arkansas. The course will center on discussion of interpretive facilities, techniques, problems and innovations with leading professionals on site. A fee will be assessed to cover transportation for student vehicles. Lodging is usually provided by park agencies at the site free or at a very low cost.

RP 4053 Water Resources Development
A study of water resources with emphasis on surface supply and small watershed and reservoir recreation. Supply and pollution in federal, state, local and private water-use allocation will be considered. Basic wastewater certificate by the Arkansas Environmental Academy available.

RP 4063 Park Operations
Prerequisite: RP 2013. Basic principles, practices, and problems pertaining to the management of public park systems with emphasis on maintenance and operation schedules, construction and maintenance equipment, employee safety, office procedures, law enforcement, personnel management, and public relations.

RP 4073 Principles and Techniques of Therapeutic Recreation
Prerequisite: RP 3013 or permission of instructor. A professional course which examines the foundation, theory, philosophy, and historical significance of therapeutic recreation. Emphasis on the therapeutic recreation process as it relates to program development and service delivery for individuals with illnesses and/or disabilities in various clinical and community settings.

RP(HA) 4093 Resort Management
Prerequisites: Junior standing and nine hours of RP or HA courses or by permission. An in-depth study of resorts with respect to their planning, development, organization, management, marketing, visitor characteristics, and environmental consequences. Passing exam results in certification from the Educational Institute of the American Hotel and Motel Association.

RP 4103 Recreation Law and Policy
An examination of the relationship between recreation and the law. Specific topics include liability negligence, contracts, safety codes, law enforcement, insurance, and administration policy. Identification of legal decision-making organizations and the court system, including the policy dimensions of land acquisition, personnel disputes, and current issues in land use.

RP(HA) 4113 Personnel Management in Parks, Recreation, and Hospitality Administration
Prerequisites: Junior standing and nine hours of RP or HA courses. An overview of personnel considerations in various Recreation and Park agencies and the Hospitality industry. Laws, legal issues, structure, staffing, motivation, training, conduct, policies and other aspects of agency/industry personnel relations will be examined using case-studies, as well as other methods.

RP(HA) 4116 Internship
Each semester. **Parks, Recreation, and Hospitality Administration majors only.** Prerequisite: Senior standing and consent of department head. Placement in selected agency settings in student-trainee status under professional guidance of both agency supervisor and faculty. Emphasis will be placed on application of classroom theory to agency requirements which fulfil student's individual career interest. No prior experience credit will be granted. Minimum of 600 clock hours (15 weeks) of supervision and written report required.

RP 4173 Therapeutic Recreation Assessment and Documentation
Prerequisites: RP 4073 or permission of instructor. This course is an examination of the various assessment tools, styles of documentation, and methods of assessment and documentation utilized in therapeutic recreation services. The purpose of this course is to provide students with the basic skills and knowledge necessary to conduct therapeutic recreation assessments and to properly document health care information.

RP 4273 Administration and Operation of Therapeutic Recreation Programs
Prerequisites: RP 3013 and 4073 or permission of instructor. Program design and planning for effective administration of client-centered services for special populations. Management of therapeutic recreation services including standards of practice, clinical supervision, reimbursement, marketing, budgeting, and writing policies and procedures.

RP 4373 Interventions in Therapeutic Recreation
Prerequisites: RP 3013, RP 4073, or permission of instructor. This course is designed to provide an understanding of the various interventions utilized in therapeutic recreation services and to develop technical competencies necessary for the provision of quality therapeutic recreation services. Emphasis will be placed on the skillful application of various processes and techniques utilized to facilitate therapeutic changes in the client.

RP 4773 Turfgrass Management: Climatic Regions and Cultivars
Fall. Prerequisite: AGSS 2013. Introduction to tufgrasses including cultures, regions and climatic conditions. Soil conditions, regular care and undesirable plant control techniques surveyed.

RP 4783 Turfgrass Management: Equipment
Spring. Prerequisite: 6 hours of Turf Management Emphasis. Introduction to turfgrass maintenance equipment including regular and new sod sites. Overview of financial analysis, operators center, equipment shop design, storage requirements, irrigation devices, and environmental compliance. Laboratory will include actual equipment set-up, servicing, operation and maintenance by factory authorized representatives on arranged basis. Certificate(s) available.

RP(HA) 4991-3 Special Problems and Topics
On demand. Investigative studies and special problems and topics related to parks, recreation, and hospitality administration.

Rehabilitation Science

RS 2003 Introduction to Rehabilitation Services
A survey of the history, philosophy, and roles of the rehabilitation and social services movement. In addition, the course will focus on public attitudes toward people with disability, adjustment to disability, and an orientation to the various community resources which can be utilized toward the rehabilitation of people with disability.

RS 2093 Research and Data Methods for Rehabilitation Science
Prerequisites: MATH 1103, PSY 2053, or consent of instructor. The main purpose of this course is to provide knowledge of the basic principles of research which may be most useful in evaluation of problems in applied settings and in assisting the student to read and evaluate research in his professional field. While experience will be gained in the use of specific design approaches and statistical operations, stress will be upon use of objective problem-solving principles for decision making. The major source of illustrative materials will be the practical setting of various rehabilitative agency and facility programs.

RS 3004 Medical and Psychosocial Aspects of Disability
A study of the etiology, treatment and prognosis of various disabling conditions. Emphasis will be placed on medical information as received in medical reports, and as related to vocational functioning and to the everyday psychological and social adjustment problems associated with disability. This course may not be taken for credit after completion of RS 3003.

RS 3013 The World of Work
A survey of the world of work emphasizing the role of work in our society, how disability changes one's work role, how career choices are made, and placement techniques.

RS 3023 Principles and Techniques of Rehabilitation Services
Prerequisite: Junior standing and RS 2003. An introduction to the casework process emphasizing principles of case management, interagency relations and interviewing skills.

RS 3033 Introduction to Vocational Rehabilitation and the Vocational Rehabilitation Process
An overview of the history, philosophy, and legal basis of vocational rehabilitation plus an in-depth study of the case process. This class will emphasize the vocational rehabilitation process through studying closed case files and case recording procedures.

RS 3043 Introduction to Social Services and the Social Service Case Process
An introduction to the history, philosophy, and legal basis of the social services movement. This class will also emphasize the social service case process and case management practices.

RS 3053 Rehabilitation Approaches in the Correctional Setting
Prerequisite: SOC/CJ 3043 or consent of the instructor. A comparative study of rehabilitation approaches in working with adult and juvenile public offenders. Approaches to be studied include: prisons, training schools, camps, halfway houses, work release, study release, preparole classes, vocational training.

RS(CJ) 3063 Probation and Parole
Prerequisite: CJ 2003 or SOC/CJ 3043. A survey of the philosophy, origin, development, rise, and evaluation of probation and parole as correctional techniques.

RS 3073 Organization and Structure in the Rehabilitation-Human Services Setting
This course will provide the student with an overview of organizational and administrative structure in the rehabilitation-human services setting. Additionally, it will focus on the dynamics involved in developing a successful managerial style.

RS 3083 Supported Employment and Special Populations
Prerequisite: RS 3013 or consent. An introduction to the ideas, philosophies, models, concepts, and issues that characterize supported employment. Applications with different disability populations will be reviewed.

RS 3093 Rehabilitation Programming and the Elderly
Prerequisite: SOC 3173 or consent of the instructor. A study of aging and the elderly from a rehabilitation viewpoint. This course will focus on intervention strategies, actual and potential, that might enable other people to maximize their potential and affect the needs for institutionalization.

RS 3141-4 Rehabilitation Science Seminar
A directed seminar in an area of rehabilitation science. The specific focus will depend upon research underway, community or student need, and the unique educational opportunity available. May be repeated for credit if course content differs.

RS 3243 Social Services for Individuals and Families
Prerequisite: RS 3043 or consent of instructor. A study of the varied and numerous services offered by federal, state, and privately-funded social service programs with an emphasis on protective services, foster care, and adoption services.

RS 4012 Internship in Rehabilitation Services
(Twelve-hour course). Prerequisite: RS 2003, RS 3023, rehab major, senior standing, 2.00 cumulative grade point average, and consent of the instructor. A full-time, one semester supervised internship in a rehabilitation or social services setting, either public or private. Emphasis will be placed on the student acquiring first-hand experience and entry level skills in practitioner roles such as case management, interviewing and counseling, and coordination of client services among the various community helping services. The purchase of professional liability insurance is required.

RS 4024 Field Placement in Rehabilitation Science
Prerequisites: RS 2003, RS 3023, junior standing, 2.00 grade point average and consent of the instructor. A supervised 14-week field placement in which the student may either be placed in one agency setting or if a broader experience is desired may rotate among several agencies. Emphasis will be placed upon gaining an understanding of the community context and coordination of client services among the various rehabilitation and helping agencies. The purchase of professional liability insurance is required.

RS 4034 Field Placement Related to Vocational Rehabilitation
Prerequisite: RS 2003 and 3023, junior standing, completion of at least six hours in the related emphasis area, 2.00 grade point average, and consent of the instructor. A supervised 14-week field placement in a setting related to vocational rehabilitation. Emphasis will be placed on the student's acquiring first-hand experience in practitioner roles such as case management, interviewing and counseling, and coordination of client services among the various community helping services. The purchase of professional liability insurance is required.

RS 4044 Field Placement Related to Aging
Prerequisite: RS 2003 and 3023, junior standing, completion of at least six hours in the related emphasis area, 2.00 grade point average, and consent of the instructor. A supervised 14-week field placement in a setting related to aging. Emphasis will be placed on the student's acquiring first-hand experience in practitioner roles such as case management, interviewing and counseling, and coordination of client services among the various community helping services. The purchase of professional liability insurance is required.

RS 4054 Field Placement Related to Corrections
Prerequisite: RS 2003 and 3023, junior standing, completion of at least six hours in the related emphasis area, 2.00 grade point average, and consent of the instructor. A supervised 14-week field placement in setting related to corrections and delinquency. Emphasis will be placed on management, interviewing and counseling, and coordination of client services among the various community helping services. The purchase of professional liability insurance is required.

RS 4064 Field Placement Related to Social Services
Prerequisite: RS 2003 and 3023, junior standing, completion of at least six hours in the related emphasis area, 2.00 grade point average, and consent of the instructor. A supervised 14-week field placement in a setting related to social services. Emphasis will be placed on the student's acquiring first-hand experiences in practitioner roles such as case management, interviewing and counseling, and coordination of client services among the various community helping services. The purchase of professional liability insurance is required.

RS 4074 Field Placement for Psychology and Sociology Majors
Prerequisite: RS 2003 and 3023, fifteen hours in major, senior standing, 2.00 grade point average, and mutual consent of the student's advisor, the supervising faculty member, and the director of Rehabilitation Science. A jointly supervised field placement in a human services agency setting, either public or private, Emphasis will be placed on the student's acquiring first-hand experience in practitioner roles as they relate to his major and special interest. The purchase of professional liability insurance is required.

RS 4084 Field Placement Related to Child Welfare Services
Prerequisite: RS 3023, 3243, and 3043, senior standing, completion of at least six hours in the related emphasis area, 2.50 grade point average, and consent of the instructor. A supervised 14-week field placement in a Division of Children and Family Services setting. Emphasis will be placed on the student's acquiring first-hand experiences in practitioner roles such as case management, interviewing, risk assessment, interagency collaboration, crisis management, and problem solving. The purchase of professional liability insurance is required.

RS 4123 Survey of Counseling Theories
Prerequisites: Six hours of psychology to include PSY 2003, PSY 3063, or PSY 3003, RS 3153, senior standing, or consent of the instructor. A comparative study of the major theories of counseling, stressing their philosophical views of mankind, assumptions, techniques, strengths, and weaknesses.

RS 4133 Seminar in Severe Disabilities
A study of what makes a disabling condition a severe disability. This course will stress independent research and class presentations by the students dealing with the various severe disabilities.

RS 4143 Rehabilitation of the Developmentally Disabled
Prerequisite: PSY 2003, RS 2003, or consent. A study of the delivery of services to, and the rehabilitation of, those handicapped individuals classified as being developmentally disabled, i.e., mental retardation, cerebral palsy, and epilepsy. Emphasis will be placed on prevocational, vocational, and community-living training for such individuals and the planning required for the provision of such services.

RS 4153 Work Evaluation in Rehabilitation
Prerequisite: RS 3013 or consent. A study of the use of work evaluation as a part of the rehabilitation process, emphasizing the philosophy, development and application of work evaluation methods, and use of work evaluation results in rehabilitation services.

RS 4163 Substance Abuse
Prerequisite: RS 2003, PSY 2003, SOC 1003, or consent of the instructor. A study of drug abuse emphasizing etiology, patterns of use and abuse, and problems related to research and approaches to treatment.

RS 4173 Family Centered Services
Prerequisite: RS 3023 and 3243 or consent of the instructor. An advanced course focusing upon family and community strengths and child welfare practice.

RS 4183 Family Services Seminar
Prerequisite: RS 3023 and 3243 or consent of the instructor. A capstone course for students emphasizing child welfare services.

RS 4991-4 Special Problems in Rehabilitation Science
Prerequisites: Twelve hours of rehabilitation science and prior approval of the Director of Rehabilitation Science. Independent work under individual guidance of a staff member.

Russian

RUSS 1014 Beginning Russian I
Emphasis on conversation; introduction to basic grammar, reading, writing, and culture.

RUSS 1024 Beginning Russian II
Continued emphasis on conversation and fundamental language skills.

RUSS 2014 Intermediate Russian I
Prerequisite: Beginning Russian II (RUSS 1024) or equivalent. Instruction designed to develop communication skills and basic knowledge of grammar, reading, writing, and culture.

RUSS 2024 Intermediate Russian II
Prerequisite: Intermediate Russian I or equivalent. Instruction designed to enhance communication skills and knowledge of grammar, reading, writing, and culture.

Secondary Education

SEED 2002 Introduction to Secondary Education
Prerequisite: Sophomore standing or departmental approval. This course is designed to help secondary teacher candidates understand the field of education systemically and to understand the professional roles and ethical responsibilities required of the professional secondary educator. The course consists of classroom instruction and a guided field component. A grade of "C" or higher in the course is required in order to be eligible for admission into Stage II of Teacher Education.

SEED 3554 Adolescent Development and Exceptionalities
Prerequisite: Admission to Stage II. This four hour survey course is designed to study the physical, emotional, mental, and social growth of the adolescent and to acquaint secondary education candidates with the range of exceptionalities and their special needs in the school program.

SEED 3702 Introduction to Educational Technology
This is a research-based course involving applications of media techniques to facilitate learning. Media presentations are planned and implemented using practical and theoretical considerations about learning characteristics, exceptionalities, and cultural differences. Various projection techniques as well as microcomputer applications are utilized.

SEED 4013 Teaching in the Middle School
Prerequisite: Admission to Stage II of the teacher education program and EDFD 3023, 3042, and 4052. Methods and procedures in teaching in the middle school. Includes individualization and instruction and interdisciplinary teaching for middle school students.

SEED 4503 Seminar in Secondary Education
Prerequisites: Admission to Stage II and Student Teaching. This course is to be taken concurrently with SEED 4909/4809. This course is designed to provide secondary teacher candidates with knowledge and understanding of the history of American Education, school law, and other contemporary education issues. This course will also address teaching/ learning strategies for content area learning and assessment.

SEED 4063/5023 Educators-in-Industry
Each semester on demand. A course devoted to career awareness in relation to the modern workplace. It is conducted in cooperation with local businesses and industries. The course involves research, on-site instruction, and work experience.

SEED 4556 Classroom Application of Educational Psychology
Prerequisite: Admission to Stage II of the Teacher Education Program. This course introduces secondary teacher candidates to educational psychology as a research-oriented discipline and a science of practical application. The course also requires that students apply the theories and principles to instructional planning, teaching, managing and assessing students. The course consists of classroom instruction and a field component.

SEED 4809 Teaching in the Elementary and Secondary School
Prerequisites: Admission to Stage II and student teaching and concurrent enrollment in SEED 4701, 4702, and 4711. A minimum of twelve weeks of supervised full-time student teaching at both the elementary and secondary levels. Meets requirements for K-12 licensure in art and music and licensure at both the elementary and secondary levels for physical education. Fee $100.

SEED 4909 Teaching in the Secondary School
Prerequisites: Admission to Stage II and student teaching and concurrent enrollment in SEED 4701, 4702, and 4711. A minimum of twelve weeks of supervised full-time student teaching at the secondary level. Fee $100.

SEED 4991-4 Special Problems in Secondary Education
Each semester on demand. Prerequisite: Senior standing and approval of department head. Individual study of significant topics or problems relating to education under the guidance of an assigned faculty member.

Sociology

SOC 1003 Introductory Sociology
An introduction to the nature of society, social groups, processes of interaction, social change, and the relationship of behavior to culture.

SOC(CJ) 2003 Introduction to Criminal Justice
An overview of the criminal justice system and the workings of each component. Topics include the history, structure and functions of law enforcement, judicial and correctional organizations, their interrelationship and effectiveness, and the future trends in each.

SOC 2013 Self and Society
Prerequisite: SOC 1003 or PSY 2003. A sociological survey of the ways in which social structure and personality interact. Topics typically covered are: socialization, attitudes and value formation and change, and group influences upon self-concept and self-esteem.

SOC 2033 Social Problems
Prerequisite: SOC 1003. A sociological analysis of contemporary social problems including inequalities, deviance, population changes, and troubled institutions.

SOC(PSY) 2053 Statistics for the Behavioral Sciences
Prerequisite: MATH 1103 and PSY 2003 or SOC 1003, or consent. An introduction to descriptive and inferential statistical methods pertinent to behavioral science research, including correlation, sampling distributions, t-tests, chi square and analysis of variance. Emphasis is upon the logical and applied aspects.

SOC 2083 Sociological Theory
A survey course of sociological theories and theory development from the classical period to post-modernism.

SOC 3003 Sociology of Complex Organizations
Prerequisite: SOC 1003. An extensive and intensive investigation of theories and research related to the sociology of complex organizations. The course aims for a focus on both micro and macro perspectives while maintaining an emphasis on the pragmatics of social organizations and organizational behavior.

SOC(PSY) 3013 Psychosocial Aspects of Death and Dying
Prerequisite: Upper division standing. This course studies the psychological and sociological aspects of death. The course will provide a basic insight into the dynamics surrounding death from the individual and societal level, its impact on survivors, and the effect death has on the living. This course cannot be taken for credit after completion of PSY 4003.

SOC 3023 The Family
Prerequisite: SOC 1003. A study of the American family institution with emphasis upon role relationships, norms, and models. Some attention is given to cross-cultural comparisons.

SOC(CJ) 3043 Crime and Delinquency
Prerequisite: SOC 1003 or CJ 2003. A study of the major areas of crime and delinquency; with emphasis on theories of crime and the nature of criminal behavior.

SOC 3053 Population Problems
A demographic analysis of population. Emphasis is upon the United States with cross-cultural comparisons.

SOC 3063 Communities
Prerequisite: SOC 1003. An exploration and analysis of the sociological concept of community from classical approaches to recent debates. May not be taken for credit after completion of SOC 2063.

SOC 3093 Sociology of Education
Prerequisite: SOC 1003. A study of education as a social system, its organizational characteristics, and its inter-relationships with other social systems such as the family, religion, economics, government, and politics.

SOC(CJ) 3103 The Juvenile Justice System
Prerequisite: SOC(CJ) 2003. An in-depth look at the juvenile justice system including the structure, statuses and roles as well as current issues, problems, and trends.

SOC 3113 Social Movements and Social Change
Prerequisite: SOC 1003. An examination of past and current social movements and their effects on social policy and social change. Topics will include classical and contemporary theories of social movements and social change.

SOC(CJ) 3153 Prison and Correction
An introduction to and analysis of contemporary American corrections. Emphasis will be on current and past correctional philosophy, traditional and modern correctional facilities, correctional personnel and offenders, new approaches in corrections, and the relationship of corrections to the criminal justice field.

SOC 3163 Introduction to Social Research
Prerequisite: SOC 1003 and SOC 2053. An introduction to research methodology, with emphasis upon conceptualization, design, and processes.

SOC 3173 Social Gerontology
Prerequisite: SOC 1003. An introduction to the sociology of aging: content provides general and specific knowledge regarding the aging process. Implications for economic, political, and family institutions are emphasized.

SOC(CJ) 3206 The Law in Action
Prerequisite: SOC/CJ 3043 and permission. Offered only in the summer. An examination of sociological theories of law and main currents of legal philosophy is followed by participant observation of actual community legal agencies, including police, courts, and others as available. Requires insurance fee.

SOC 4003 Minority Relations
Prerequisite: SOC 1003. A study of minority groups with emphasis upon discrimination, socio-historical characteristics and processes of change. Minorities considered include racial, ethnic, and gender.

SOC 4023 (PHIL 4053) History of Social Thought
A study of the historical development of social thought.

SOC 4053 Sociology of Health and Illness
Prerequisite: SOC 1003. An in-depth look at the sociology of health and illness including an examination of the social structures related to the medical system, the social psychology of health and illness, a comparative analysis of sick role behavior as well as the study of social causes and consequences of health and illness.

SOC 4063 Social Stratification
Prerequisite: SOC 1003. A study of social class and consequences for society and individuals.

SOC 4141-4 Seminar in Sociology
A directed seminar in an area of sociology. The specific focus will depend upon research underway, community or student need, and the unique educational opportunity available. May be repeated for credit if course content differs.

SOC 4163 Sociology Capstone I
Prerequisites: SOC 1003, 2053, 2083, and 3163. An intensive quantitative research experience in which students will learn direct application of quantitative research methods resulting in a portfolio-quality paper. Topics include but are not limited to the following: topic selection, question development, survey construction, data collection and analysis.

SOC 4173 Sociology Capstone II
Prerequisites: SOC 1003, 2053, 2083, and 3163. An intensive qualitative research experience in which students will learn direct application of qualitative research methods resulting in a portfolio-quality paper. Topics include but are not limited to the following: topic selection, question development, focus groups, participant observation, intensive interviewing, data collection and analysis.

SOC 4991-4 Special Problems in Sociology
Prerequisite: Prior approval by instructor. Content will be determined by specific curriculum review and student need.

Spanish

SPAN 1014 Beginning Spanish I
Introduction to conversation, basic grammar, reading, and writing. Four hours of classroom instruction. Advanced placement and credit by examination are available to students who have previously studied Spanish.

SPAN 1024 Beginning Spanish II
Continued instruction in grammar and fundamental language skills. Four hours of classroom instruction.

SPAN 1063 Basic Spanish for Medical and Social Services
Useful terminology and expressions for the medical and social-service situation, with a minimum of grammar. May be acceptable in lieu of SPAN 1014 with instructor's consent.

SPAN 2014 Intermediate Spanish I
Prerequisite: SPAN 1024 or equivalent. Instruction designed to develop greater facility in fundamental skills and more extensive knowledge of grammar. Four hours of classroom instruction.

SPAN 2024 Intermediate Spanish II
Instruction intended to complete the survey of the basic grammar of the language and to provide the mastery of fundamental skills essential for enrollment in upper-level Spanish courses. Four hours of classroom instruction.

SPAN 3003 Conversation and Composition I
Prerequisite: SPAN 2024 or equivalent. Further study of Spanish grammatical systems with practice in composition and conversation based on analysis of short texts (newspaper articles, short stories, plays, poetry). Students are expected to use Spanish in oral and written expression.

SPAN 3013 Conversation and Composition II
Prerequisite: SPAN 3003 or equivalent. Continuation of SPAN 3003.

SPAN(ENGL, FR, GER, SPH) 3023 Introduction to Linguistics
Prerequisites: ENGL 1023 and SPAN 2024 or equivalent. A study of basic concepts in language, comparative characteristics of different languages, and the principles of linguistic investigation.

SPAN 3123 Spanish Civilization and Culture
Prerequisite: SPAN 2024 or equivalent. Study of the geography, history, arts, institutions, customs and contemporary life of the Spanish people.

SPAN 3133 Spanish-American Civilization and Culture
Prerequisite: SPAN 2024 or equivalent. Study of the geography, history, arts, institutions, customs, and contemporary life of the peoples of Spanish America, with some attention to the major pre-Columbian civilizations.

SPAN 3143 Contemporary Hispanic Culture Immersion Experiences
Prerequisite: enrollment in a Tech-sanctioned travel/study program in a Hispanic country, completion of SPAN 2024 or equivalent, and permission of the instructor. Study of the contemporary culture of a Hispanic country as manifested in a specific region. May substitute for SPAN 3003 or, if appropriate, for SPAN 3013.

SPAN 3153 Hispanic Cultural Heritage Immersion Experiences
Prerequisite: enrollment in a Tech-sanctioned travel/study program in a Hispanic country, completion of SPAN 2024 or equivalent, and permission of the instructor. Study of the cultural heritage of a Hispanic country as manifested in a specific region. May be repeated for credit in a different region. May substitute for SPAN 3123 if taught in Spain or for SPAN 3133 if taught in Spanish America.

SPAN 4213 Spanish Literature
Prerequisite: SPAN 2024 or equivalent. A survey of the literature of Spain with readings from representative works.

SPAN 4223 Spanish-American Literature
Prerequisite: SPAN 2024 or equivalent. A survey of Spanish-American literature with readings from representative works.

SPAN 4283 Seminar in Spanish
Prerequisite: SPAN 2024 or equivalent. Course content will vary. May be repeated for credit if course content varies.

SPAN(FR, GER, LAT) 4703 Foreign Language Teaching Methods
Prerequisite: SPAN 3013 and 3113 or equivalent; admission to Stage II of the Secondary Education sequence or equivalent. Survey of instructional methods and discussions and demonstration of practical techniques for the teaching of a foreign language.

SPAN 4801 Cultural Immersion and Research
Prerequisite: Enrollment in Spanish Immersion Weekend and permission of instructor. Intensive study of Spanish cultural topics followed by individual research projects. May be repeated for credit if content varies.

SPAN(FR, GER, JPN) 4901-3 Foreign Language Internship
Prerequisites: Advanced foreign language proficiency; permission of the instructor and the department head. The Foreign Language Internship is intended primarily for majors in foreign languages or international studies. It is designed to provide outstanding students the opportunity to perfect their language proficiency and to acquire specific training and skills overseas. The overseas sponsor and the foreign language instructor of record will supervise the intern. Performance evaluations and a research paper will be required.

SPAN 4991-4 Special Problems in Spanish
Prerequisite: SPAN 2024 and consent of the instructor and the department head. Designed to provide advanced students with a course of study in an area not covered by departmental course offerings.

Speech

SPH 1003 Introduction to Speech-Communication
The purpose of this course is to develop within each individual an understanding of the utilitarian and aesthetic dimensions of speech-communication and to increase ability to function effectively with others in a variety of communication situations.

SPH 1011 Orientation to Speech Communication Studies
Required of all Speech Communication majors. An overview of student research expectations, university resources, contemporary trends in the field, and employment opportunities. Should be taken upon declaring a major. May be taken concurrently with other speech communication courses.

SPH 1021 Listening
Required of all Speech Communication majors. A course to identify critical aspects of listening problems and to develop understanding and utilization of skills needed to improve listening.

SPH 1031 Parliamentary Procedures
A contemporary and practical approach toward the acquisition of the knowledge and skills necessary to effectively participate in organizational discourse where the rules of parliamentary procedure are utilized.

SPH 1111, 1121 Individual Events Practicum
Preparation and performance of a variety of public speaking events.

SPH 2003 Public Speaking
Each semester. Prerequisites: ENGL 1013 or equivalent. Fundamentals of composition, delivery, and logical reasoning. Effective utilization of basic visual aids will be included.

SPH 2013 Voice and Diction
A course for majors and non-majors. A study of the effective use of the voice, improvement of diction, development of vocabulary, use of the dialects, techniques of radio television announcing, recognition of basic speech disorders.

SPH 2111, 2121 Debate Practicum
Case research and participation in public debate.

SPH 2173 Business and Professional Speaking
An oral communication course for individuals in business, industry and the professions. Human communication theories and behavioral research are used as a framework for generating competencies in interviewing, briefings, conference leadership, and intergroup coordination.

SPH 3003 Interpersonal Communication
This course emphasizes interpersonal aspects of communication. Central topics are choice making, personal knowledge, creativity and interpersonal relationships. Increased self-awareness, understanding of interpersonal relationships and improvement of interpersonal skills are primary goals.

SPH 3013 Intercultural Communication
Prerequisite: SPH 1003, or SPH 2003, or consent of instructor. An examination of communication variables in different cultures and how to better understand and more effectively communicate across diverse cultures.

SPH(ENGL, FR, GER, SPAN) 3023 Introduction to Linguistics
Fall. Prerequisite: ENGL 1023 or equivalent. A study of basic concepts of language, comparative characteristics of different languages, and the principles of linguistic investigation.

SPH 3033 Interviewing Principles and Practices
Prerequisite: SPH 2003 or consent of instructor. A course for both majors and nonmajors that uses interviewing theory as a framework for developing skills in preparing for and practicing various types of interviews.

SPH 3063 Oral Interpretation
Theory and practice of intelligent and effective oral reading of prose and poetry.

SPH 3073 Group Discussion
Procedures used in small groups to facilitate the exchange of information, sharing ideas, solving problems, determining policies, and implementing action.

SPH 3083 Communication and the Classroom Teacher
Prerequisites: Junior standing and completion of ENGL 1023 or equivalent. A study of the relationship between communication theory and instructional processes. Practical classroom experiences are stressed.

SPH 3111, 3121 Debate Practicum
Case preparation, brief writing, and participation in public debate.

SPH 3123 Argumentation
Prerequisites: SPH 1003, SPH 2003 or equivalent, or consent of instructor. Designed to develop research, critical thinking, and persuasive speaking ability. Includes lecture, discussion, research, study of debates, classroom debates, and presentations.

SPH 3223 Nonverbal Communication
This course provides an examination of the various methods in which nonverbal communication is utilized in the communication process. Included in the examination will be historical contexts, as well as the effects of physical appearance, touch, proxemics, eye contact, kinesics, and voice.

SPH 4003 Human Communication Theory
Prerequisite: 18 hours in Speech Communication, consent of instructor. This capstone theory class integrates learning about speech communication in various contexts. It is an in-depth study of contemporary and traditional perspectives of human communication, and synthesizes major concepts in human communication theory development.

SPH 4053 Speech-Communication Seminar
Prerequisite: Junior standing. A course for both majors and non-majors who want to investigate the relationship between human communication and contemporary social, political, and economic issues.

SPH 4063 Organizational Communication
Prerequisites: SPH 1003 and SPH 3003 or SPH 3073 or equivalent, or consent of instructor. Theories of organizational communication are examined in terms of their practical application to various organizational contexts, including social, political, profit, and nonprofit organizations. Includes lecture, discussion, research, and group projects.

SPH 4073 Directing Forensics
Prerequisites: SPH 2003, SPH 3063, SPH 3123, and/or consent of the instructor. Practical study and training to lead to the planning of activities, directing competitive events, and administration of a forensic program on the high school level.

SPH 4111, 4121 Individual Events Practicum
Preparation and performance of a variety of interpretive events.

SPH 4123 Rhetorical Criticism
Prerequisite: SPH 1003, or SPH 2003, or consent of the instructor. This course will provide the principles of rhetorical theories as they have developed throughout history, and apply them to the critical analysis of various communication events.

SPH 4153 Persuasive Theory and Audience Analysis
Survey of classical and social science theories of persuasion. Particular emphasis is given to analysis of persuasive strategies, preparation of persuasive appeals, ethics of persuasion, and audience analysis. A consideration of social movements and persuasive campaigns is also included.

SPH 4173 Internship in Speech Communication
Prerequisites: Fifteen semester hours of Speech and SPH 4063, which can be taken concurrently; university grade point average of at least 2.50. A course that focuses on career goals of students through classroom discussions and places students in communication positions within public and private organizations.

SPH 4283 Children's Theatre: Techniques and Practicum
Summer. Prerequisites: Consent of instructor. The philosophy of teaching acting to children, in theory and in practice. The course is designed for drama majors, teachers, and others interested in child development. The semester equivalent of two hours of class lecture is combined with the semester equivalent of two hours of supervised laboratory experience in a children's theatre setting. May not be taken for credit after completion of SPH 5283 or equivalent.

SPH 4701 Special Methods in Speech
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4909. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching speech.

SPH 4991-4 Special Problems in Speech-Communication
A course for majors only. Students are accepted by invitation of the instructor.

Theatre

TH 2273 Introduction to Theatre
Prerequisite: ENGL 1013 or equivalent. TH 2273 may be used to fulfill the fine arts general education requirement. A study of theatre as an art form with particular attention to scenic, dramatic, literary and historic elements.

TH 2301 Introduction to Theatrical Dance
An introduction to the basic skills and discipline of stage movement and the steps and vocabulary of jazz, tap and ballet. This course counts as a PE activity credit in degree programs that are not intended for teacher licensure.

TH 2331 Advanced Theatrical Dance
Prerequisite: TH 2301. This course provides a continuation of the skills development for stage movement, and the steps, vocabulary, and discipline of ballet, tap, jazz, modern dance, and basic partnering. This course counts as a PE activity credit in degree programs that are not intended for teacher licensure.

TH 2513 Introduction to Theatrical Design and Production
An introduction to the field of technical theatre.

TH 2511, 2521 Practicum in Set Construction and Lighting
Credit will be given for forty hours of participation in these elements of stagecraft.

TH 2611, 2621 Practicum in Costume and Makeup
Credit will be given for forty hours of participation in these elements of stagecraft.

TH 2703 Acting Theories and Techniques
An introduction to standard acting techniques, including method acting.

TH 2711, 2721 Acting Practicum
Prerequisite: Consent of instructor. Credit will be given for a large part in a major production or for a small part preceded by a series of smaller parts in previous productions.

TH 2713 Intermediate Acting
Prerequisite: TH 2703 or equivalent. Emphasis on character development, character interaction, and scene work, with special attention to comedy.

TH 3513 Stagecraft Techniques
A course for both majors and non-majors who want to learn the technical aspects of dramatic productions. A study of the different types of presentations -- their construction, organization, and use. Emphasis will be placed upon children's theatre, reader's theatre, and pageant theatre as well as on the traditional proscenium theatre.

TH 3523 Principles of Theatrical Lighting
Prerequisite: TH 3513, or consent of instructor. An introduction to lighting design, including the history of theatrical lighting, electrical theory and practice, lighting control systems, color in lighting, and the process of creating basic lighting keys.

TH 3703 Advanced Acting: Styles
Prerequisite: TH 2713 or equivalent. The analysis and performance of scenes from plays from various historical periods, with attention to vocal and kinesthetic qualities appropriate to different styles.

TH 3803 Directing Theories and Techniques
An introduction to standard directing techniques.

TH 3811, 3821 Directing Practicum
Prerequisite: Consent of instructor. Credit will be given for directing a one-act play.

TH 3833 Advanced Directing
Prerequisites: TH 3811, and consent of instructor. Credit will be given for directing a full-length play.

TH 4243 Senior Project in Theatre History
Research project approved by the department to facilitate graduate school application.

TH(ENGL) 4263 Theatre History I: Antiquity to 1564
A historical survey of the development of drama and theatre from classical Greece through the sixteenth century.

TH(ENGL) 4273 Theatre History II: 1564 to 1900
A historical survey of the development of drama and theatre from the seventeenth to the nineteenth centuries.

TH 4313 Theatre History III: 1900 to 1960
The development of theatre during the first part of the twentieth century, including realism, expressionism, symbolism, epic theatre, and theatre of the absurd. May not be repeated for credit.

TH 4323 Theatre History IV: 1960 to the Present
The development of theatre during the latter part of the twentieth century, including neo-realism, post-modernism, feminism, political theatre, and collective creation. May not be repeated for credit as TH 5323.

TH 4503 Scene Design
Prerequisites: TH 3513, or permission of instructor. A study of the elements of design for the stage, from conception to finished production models, focusing on line, form, mass, and color. May not be repeated for credit as TH 5503 or equivalent.

TH 4506 High School Play Production
This course provides essential information about high school play production. The course will provide basic information in lighting, sound design, set design and construction, makeup, costume design and construction, stage management, directing, and improvisational techniques. May not be repeated for credit as TH 5506 or equivalent.

TH 4513 Drafting for the Stage
Mechanical drawing techniques are practiced to produce ground plans, elevations, construction drawings, and perspective sketches of theatrical settings.

TH 4543 Senior Project in Design
Portfolio creation project approved by the department to facilitate graduate school application process or professional placement.

TH 4613 Introduction to Costuming
An examination of the history, theory and practice of costume design. It makes use of lecture, practical experience and personal exploration through a variety of artistic media to help each student understand both the art and technology of costume design.

TH 4843 Senior Project in Theatrical Performance
Portfolio creation project approved by the department to facilitate graduate school application or professional placement.

TH 4983 Theatre Seminar
Prerequisites: Twelve credits in theatre and junior standing. A directed seminar dealing with a selected topic in theatre studies. May be repeated for credit for different topics. May not be repeated for credit as TH 5983 unless topic is different.

TH 4991-4 Special Problems in Theatre
For majors only. Students are accepted by invitation of the instructor.

Vocational Business Education

(Additional prerequisites for 3000- and 4000-level courses are listed in the School of Business section of this catalog.)

VOBE 4023-5023 Methods of Teaching Vocational Business
A methods course designed to prepare the beginning business educator for effective teaching in the contemporary vocational business education classroom. Teaching methodologies for the business education occupational clusters are presented and practiced.

VOBE 4053-5053 Technology Methods for Business Education
A course in technology education focusing on methods and hands-on activities utilized in secondary Business Education programs with emphasis on hardware, software, and program development. May not be repeated for credit as VOBE 5053 or equivalent.

VOBE 4063-5063 Educators-in-Industry
A course devoted to career awareness in relation to the modern workplace. It is conducted in cooperation with local businesses and industries. The course involves research, on-site instruction, and work experience.

VOBE 4093-5093 Directed Vocational Work Experience
Prerequisite: Consent of instructor and advisor's recommendation. A course for business teachers or business education students who desire or need practical, on-the-job experience in areas related to the vocational business education curriculum; designed to provide practical experience in a structured, supervised setting.

VOBE(SEED) 4556 Classroom Application of Educational Psychology
Prerequisite: Admission to Stage II of the teacher education program. Application of educational psychology principles to middle level and secondary classroom practices. The course may not be taken after completion of EDFD 3042, EDFD 3045, or SEED 4553.

VOBE 4701 Special Methods in Vocational Business
Prerequisites: Admission to student teaching phase of the teacher education program and concurrent enrollment in SEED 4909. Intensive on-campus exploration of the principles of curriculum construction, teaching methods, use of community resources, and evaluation as related to teaching vocational business.

Wellness Science

Coeducational Activities

WS 1002 Physical Wellness and Fitness
The course provides students with the opportunity to assess their current lifestyle and consider the possible consequences for the present and the future. The class provides a mechanism for change by actively involving the student in self-analysis and a trial exercise program. Two scheduled class meetings and two hours arranged. This course will satisfy two credit hours of PE activity. $10 laboratory fee.

WS 1031 Food, Exercise, and Body Composition
The course provides the student with the opportunity to assess their current lifestyle pertaining to the nutrients consumed in the diet and the amount and type of aerobic exercise participation. Special emphasis is placed on developing an internal locus of control by actively involving the student in self-analysis activities, developing an understanding of nutrient intake and the culminating effects on personal health, and participation in an appropriate aerobic exercise program. $10 laboratory fee.

WS 1061 Muscle Fitness for Women
Structured to provide for the development of insights and practices associated with resistive activity as the student accomplishes and individually predicted level of muscle fitness. $10 laboratory fee.

WS 1081 Muscle Fitness for Men
Structured to provide for the development of insights and practices associated with resistive activity as the student accomplishes an individually predicted level of muscle fitness. $10 laboratory fee.

WS 1091 Fitness Walking/Jogging
The course provides the student with the opportunity to assess his or her personal physical fitness level with trained personnel. Special emphasis is placed on improving the physical fitness level of the student through participation in appropriately designed walking or jogging activity. Students who enroll in the class will submit themselves to the physical fitness protocol administered by the HPE and Wellness faculty members and upper-level majors. $10 laboratory fee.

Academic Courses

WS 2003 Field-Based Experience in Wellness
The class provides the prospective Wellness/Fitness professional with an opportunity to observe on-site a community-based wellness/fitness agency or business. A combination of classroom and on-site experiences will direct the student's focus to various aspects of commercial or institutional programs and services aimed at lifestyle enhancement. Specific lecture-class meetings and at least 30 hours of observation in an agency or business setting will be required.

WS 2031 Directing Food, Exercise, and Body Composition Programs
The course provides the student with the opportunity to assess their current lifestyle pertaining to the nutrients consumed in the diet and the amount and type of aerobic exercise participation. Special emphasis is placed on the methodology of teaching about the development of an internal locus of control by actively involving the student in self-analysis activities, developing an understanding of nutrient intake and the culminating effects on personal health, and participation in an appropriate aerobic exercise program. The course is structured to provide for the development of knowledge and practices of directing food, exercise, and body composition programs employed to accomplish an individually predicted level of physical fitness. $10 laboratory fee.

WS 2043 Applied Fitness Assessment and Development
Prerequisites: PE 2653 and PE 3663. A survey and application of the knowledge and experiences in assessing and developing all components of physical fitness.

WS 2081 Directing Muscle Fitness Programs
Structured to provide for the development of knowledge and practices of directing resistance training activities used to accomplish an individually predicted level of muscle fitness. $10 laboratory fee.

WS 2091 Directing Fitness Walking/Jogging Programs
The course provides the Wellness/Fitness major student with the opportunity to assess the physical fitness level of individuals under the supervision of trained personnel. The course is structured to provide for the development of knowledge and practices of directing fitness walking and jogging activities employed to accomplish an individually predicted level of aerobic fitness. Students who enroll in the class will submit themselves to the physical fitness protocol as well as help administer various evaluation measures to members of a corresponding wellness activity class. $10 laboratory fee.

WS 3003 Exercise Prescription
Prerequisite: WS 2043 or consent of instructor. A course designed to expose the student to the aspects of health-related and skill-related physical fitness, with particular attention given to prescribing exercise programs. Attention will be given to choosing appropriate fitness assessments, along with development of appropriate goals for clientele.

WS 3023 Exercise Behavior and Adherence
The course provides the student with the opportunity to learn about the components which impact exercise behaviors and adherence to physical exercise programs. Emphasis is placed on the identification of components which directly impact on personal motivation for the development of appropriate exercise behaviors, and the development of incentives which assist in adherence to health enhancement programs.

WS 4003 Advanced Professional Seminar
Prerequisite: Completion of all 1000- and 2000-level Wellness Science required classes. This course provides the advanced wellness/fitness major with a setting in which research and contemporary topics critical to the profession may be explored. The student will perform literature research, data gathering, and professional writing/ presentation throughout the class.

WS 4012 Wellness and Fitness Program Management Internship
(Twelve-hour course). Prerequisites: Admission to internship program and 2.00 grade point average. Intensive on-campus classroom exploration of professional principles and procedures used in the areas of health and fitness promotion for the first three weeks of the semester. The remaining portion of the semester is spent in a supervised full-time internship at a designated site. Fee $25.

WS 4063 Wellness and Fitness Programming
The course is designed to provide the student with the opportunity to discover various methods employed in planning and implementing wellness and fitness programs in multiple settings. Special emphasis is placed on the administration of client-specific health enhancement programs designed for persons in corporate settings, fitness center clientele, and patients in physical rehabilitation.

WS 4991-3 Special Problems in Wellness Science
Independent work on approved wellness science topics under the individual guidance of a faculty member. Admission requires the consent of the department head.