

Arkansas Tech University - Ozark Campus
2011-2012 Technical Catalog
Ozark, Arkansas
www.atu.edu/ozark

University Mission Statement

Arkansas Tech University, a state-supported institution of higher education, is dedicated to nurturing scholastic development, integrity, and professionalism. The University offers a wide range of traditional and innovative programs which provide a solid educational foundation for life-long learning to a diverse community of learners.

Ozark Campus Mission Statement

Arkansas Tech University - Ozark Campus, in partnership with the community, will provide a quality educational environment which will enable all students to learn the skills and acquire the knowledge necessary for them to become contributing members in the workforce and in society.

Vision Statement

The vision of Arkansas Tech University is to be a student-centered university of choice.

Accreditation



Arkansas Tech University - Ozark Campus is accredited by The Higher Learning Commission and is 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

Arkansas State Board of Nursing
University Tower Bldg, Suite 800
1123 South University
Little Rock, Arkansas 72204
(501) 686-2700

National Automotive Technicians Education Foundation
101 Blue Seal Drive, Suite 101
Leesburg, Virginia 20175
(703) 669-6650

State Health Department Cosmetology Division
101 East Capitol Avenue, Suite 108
Little Rock, Arkansas 72201
(501) 682-2168

Arkansas Department of Health
Division of EMS & Trauma Systems
4815 W. Markham St., Slot 38
Little Rock, AR 72205
(501) 661-2262

Committee on Accreditation of Educational Programs
for the Emergency Medical Services Professions
1248 Harwood Road
Bedford, TX 76021
(817) 330-0080

Enrolling in Arkansas Tech University Ozark Campus

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

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

For More Information

Main Telephone Number/General Information (479) 667-2117
Office of Academic Affairs (479) 667-1707
Office of Student Services (479) 667-3433
Office of Fiscal Affairs (479) 667-2950
Financial Aid (479) 667-2117

Arkansas Tech University - Ozark Campus will provide equal opportunity in employment to all persons. This applies to all phases of the personnel process, including recruitment, hiring, placement, promotion, demotion, separation, transfer, training, compensation, discipline, and all other employment terms, conditions, and benefits. Arkansas Tech University - Ozark Campus prohibits discrimination based on race, color, religion, national origin, sex, age, disability, genetic information, or veteran status. Arkansas Tech University - Ozark Campus will provide a copy of this policy to all applicants for employment. All faculty and staff will be notified annually of the policy. Further, Arkansas Tech University - Ozark Campus will consider through a designated grievance procedure, the complaints of any person who feels that he or she has been discriminated against on the basis of race, color, religion, national origin, sex, age, disability, genetic information, or veteran status. Arkansas Tech University - Ozark Campus will have an Affirmative Action Plan that contains a set of specific and result-orientated procedures to apply every good faith effort to achieve prompt and full utilization of minorities, women, those with disabilities or veterans at all levels and all segments of its workforce where deficiencies exist. Additionally, Arkansas Tech University - Ozark Campus will continually monitor and evaluate its employment practices to ensure that they are free of bias or discrimination based upon race, color, religion, national origin, sex, age, disability, genetic information, or veteran status.

A copy of the Affirmative Action Plan, including specific responsibilities and provisions for implementation and compliance will be made available upon request.

Responsibility for implementation and compliance with this Affirmative Action policy has been delegated to the Affirmative Action officer, e-mail affirmative.action@atu.edu. Arkansas Tech University - Ozark Campus 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 - Ozark Campus to maintain the Institute 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 that the Institute is concerned and prepared to take action to both 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 comment 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 on the main campus of Arkansas Tech University in Russellville. 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 on the main campus of Arkansas Tech University in Russellville.

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 - Ozark Campus.

Academic Calendar 2011 - 2012

Summer Session 2011 First Term	Late registration for first term	June 6 - 7
	Classes begin	June 6
	Last day to register and add courses/change sections	June 7
	Last day to officially withdraw/drop courses with 80 percent reduction of tuition	June 10
	Preregistration for freshmen for fall semester	May - August
	Last day to drop courses with a "W" or change from credit to audit	July 1
	Holiday	(Monday) July 4
	First term ends	July 8
Second Term	Late registration for second term	July 11 - 12
	Classes begin	July 11
	Last day to register and add courses/change sections	July 12
	Last day to officially withdraw/drop courses with 80 percent reduction of tuition	July 15
	Last day to drop courses with a "W" or change from credit to audit	August 5
	Second term ends	August 12
	Russellville Campus Graduation	August 13
Fall Semester 2011	Registration	August 22 - 23
	Classes begin	August 24
	Last day to officially withdraw/drop courses with full reduction of tuition/fees	August 25
	Last day to register and add courses/change sections	August 30
	Labor Day holiday	September 5
	Last day to officially withdraw/drop courses with 80 percent reduction of tuition	September 28
	Mid-term	October 12
	Deadline for degree audit (transcript evaluation), Spring and Summer 2012 graduates	October 14
	Preregistration for spring semester	November
	Thanksgiving holidays	7:00 a.m., November 23 - 7:00 a.m., November 28
	Last day to drop courses with a "W" or change from credit to audit	November 28
	Reading Day	December 6
	End of course examinations	6:00 a.m., December 7 - 12:30 p.m., December 13
	Russellville Campus Graduation	December 17
Spring Semester 2012	Registration	January 10 - 11
	Classes begin	January 12
	Last day to officially withdraw/drop courses with full reduction of tuition/fees	January 13
	Martin Luther King Day holiday	January 16
	Last day to register and add courses/change sections	January 19
	Last day to officially withdraw/drop courses with 80 percent reduction of tuition	February 16
	Mid-term	March 2
	Deadline for degree audit (transcript evaluation), December 2012 graduates	March 7
	Preregistration for fall semester	April
	Last day to drop courses with a "W" or change from credit to audit	April 19
	Reading Day	May 1
	End of course examinations	6:00 a.m., May 2 to 12:30 p.m., May 8
	Russellville and Ozark Campus Graduations	May 12
	Summer Session 2012 (tentative) First Term	Late registration for first term
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 tuition		June 8
Preregistration for freshmen for fall semester		May - August
Last day to drop courses with a "W" or change from credit to audit		June 29
Holiday		(Wednesday) July 4
First term ends		July 6
Second Term	Late registration for second term	July 9 - 10
	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 tuition	July 13
	Last day to drop courses with a "W" or change from credit to audit	August 3
	Second term ends	August 10
	Russellville Campus Graduation	August 11

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

Administration

Board of Trustees

Charles Blanchard.....Russellville
John E. Chambers III.....Danville
Tom Kennedy.....Little Rock
Leigh Burns Whiteside.....Russellville

Board of Advisors

Tom Banhart.....Van Buren
Bruce Coleman.....Mountainburg
C.A. Kuykendall.....Ozark
Jimmy Rofkahr.....Scranton
Bill Rue.....Ozark
Donald Smith.....Cecil
Jerry Standridge.....Booneville
Ron Vest.....Ozark

Administrative Officers

Robert Charles Brown, 1993 President
B.A., Northwestern State University, 1967
M.A., Louisiana State University, 1969
Ph.D., Louisiana State University, 1976

Jo Alice Blondin, 2004 Chancellor
B.A., Purdue University, 1993
M.A./Ph.D., Arizona State University, 1998

Bruce Sikes, 2007..... Chief Academic Officer
B.S.E., University of Central Arkansas, 1986
M.S.E., University of Central Arkansas, 2000

Sandra D. Cheffer, 2004..... Chief Fiscal Officer
B.S., Illinois State University, 1990
M.B.A., Olivet University, 1999

Richard Harris, 2007..... Chief Student Officer
B.A., Arkansas State University, 1997
M.P.A., Arkansas State University, 1999

Ken Warden III, 2009..... Chief Business and Community Outreach Officer
A.A.S., Westark Community College, 1993
B.S., University of Arkansas, 2001
M.Ed., Arkansas Tech University, 2006

Administrative Staff

Jessica Birchler.....Coordinator of Student Recruitment
Daniel Bush.....Career Support Services Facilitator
Heidi Gregory..... Counselor of Career Pathways Initiative
Tara Johnson..... Director of Career Pathways Initiative
Brad Kent.....Adult Education Coordinator
Megan Morris.....Associate Director of Advising and Retention
Christa Nehus.....Assistant Manager of Fiscal Affairs
Laura Rudolph..... Director of Public and External Relations
Jason Salmans..... Associate Director of Computer Services
Brenda Shoop..... Associate Registrar
Kristie Moore..... Librarian
Deborah Wood..... Director of Financial Aid

**Support Services
Staff**

Sandra Anderson..... Physical Plant Maintenance Supervisor
Kathy Bartlett..... Office of Academic Affairs
Dianne Bell..... Office of Student Accounts/Purchasing
Tracy Chapman..... Physical Plant Maintenance
Linda Clifton..... Office of Student Services
Peter Clifton..... Physical Plant Maintenance
Debbie Edgin..... Office of Student Services
John Gwatney..... Physical Plant Maintenance
Stacie Harden..... Office of Student Accounts/Payroll
Faith Johnson..... Office of Student Services
Sharyl Moffit..... Office of Allied Health
Beverly Nehus..... Office of the Chancellor/Assistant
Sandra Nelson..... Career Pathways Initiative
Mehedi Rajib..... Software Support Specialist
Chris Rambo..... Public Safety Officer
Mitzi Reano..... Office of Human Resources
Stuart Russell..... Career Pathways Initiative Instructor
Amy Scaccia..... Bookstore
Julie Schmalz..... Office of Student Services/Financial Aid
Charles Stacy..... Physical Plant Maintenance

Ozark Campus Faculty

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

The date after each name indicates the first year of appointment to this institution.

Tekla Barr, 1990
English and Business Technology Instructor
B.S., University of the Ozarks, 1980 [Top](#)

Brian Bass, 2008
Automotive Service Technology Instructor
A.A.S., Arkansas Tech University - Ozark,, 2008

Kenneth Beeler, 2005
Air Conditioning/Refrigeration Instructor
Air Conditioning/Refrigeration, Arkansas Tech University - Ozark Campus, 2004

Jody Chrisman, 1987
Industrial Control Systems Instructor
Electronics Technology, Arkansas Tech University - Ozark Campus, 1982 [Top](#)

Corey Danekas, 2008
Welding Technology Instructor
A.A.S., Arkansas Tech University - Ozark Campus,, 2008 [Top](#)

Judy Davis, 1991
GED/ABE Instructor
B.S., University of Arkansas, 1969

Gwen Faulkenberry, 2010
English Instructor
B.S., University of Central Arkansas, 1995
M.S., Arkansas Tech University, 2006 [Top](#)

Theresa Fontaine, 2007
Practical Nursing Instructor
B.S., University of Central Arkansas, 1991;
A.A.S., Parkland College, 1999;
B.S.N., Arkansas Tech University, 2003

Cathy Fultz, 1991
Cosmetology Instructor
Cosmetology, Arkansas Tech University - Ozark Campus, 1970
Cosmetology Instructor Training, Arkansas Tech University - Ozark Campus, 1989 [Top](#)

Leann Goines, 2009
Physical Therapist Assistant Instructor/Academic Coordinator of Clinical Education
A.A.S.,Northwest Arkansas Community College, 1993

Lance Greathouse, 2008
EMT/Paramedic Instructor/Clinical and Internship Coordinator
B.S.,Arkansas Tech University, 2006

Clinton Hall, 1996
Business Technology Instructor
A.A., University of Arkansas - Fort Smith, Fort Smith, 1989;
B.S., Arkansas Tech University, 1992;
M. Ed., Arkansas Tech University, 2007 [Top](#)

Stan Hatcher, 1998
Collision Repair Instructor
Collision Repair Technology, Arkansas Tech University - Ozark Campus, 1983

Natalie Helmert, 2007
Practical Nursing Instructor
B.S.N., Arkansas Tech University, 1999

Debra Hines, 1998
Practical Nursing Clinical Instructor
Licensed Practical Nursing, Arkansas Tech University - Ozark Campus, 1971

Kendall Hopkins, 2007
Collision Repair Instructor
Industry Certifications, 1993 - 2006

Ron Hutain, 1984
Industrial Control Systems Instructor
A.A., Chaffey Community College, 1978

Serelda Johnson, 2005
Business Technology/Medical Technology Instructor
A.A.S., Coastal Bend College, 1999;
B.S., Arkansas Tech University, 2003 [Top](#)

Charles Lee, 2005
Mathematics Instructor
B.A., Concordia College, 1993
M.Ed Education, Arkansas Tech University, 2009 [Top](#)

Ester Leonard, 2004
Practical Nursing Instructor
Licensed Practical Nursing, Arkansas Tech University - Ozark Campus, 1985;
A.A.S., University of Arkansas - Fort Smith, 1995
B.S.N., Arkansas Tech University, 2008

Bobbie Lewis, 2007
Practical Nursing Clinical Instructor
Practical Nursing, Arkansas Tech University - Ozark Campus, 2002

Christy Mccollough, 2006
GED/ABE Instructor
B.A., Arkansas Tech University, 2000 [Top](#)

Patricia McCreary, 1990
Applied Laboratory Technology Instructor
B.A., North Texas State, 1965

Angie Medlock, 2002
Business Technology Instructor
B.S., University of the Ozarks, 1980;
M. Ed., Arkansas Tech University, 2007

Janet Mickens, 1983
Practical Nursing Instructor
A.A.S., University of Arkansas Fort Smith, 1977

Mike Murders, 2010
Developmental Math/Computer Information Systems Instructor
B.S., Park College, 1995; M.S.,
Troy University, 1998 [Top](#)

Debbie Neumeier, 2007
Cosmetology Instructor
Cosmetology, Arkansas Tech University - Ozark Campus, 1992;

Cosmetology Instructor Training, Arkansas Tech University - Ozark Campus, 2006;
A.A.S., Arkansas Tech University, 2009

Nina Pope, 2010
Physical Therapist Assistant Instructor
B.S., University of Texas/San Antonio, 1982

[Top](#)

Ritchie Powers, 2007
EMT/Paramedic Instructor
A.S., University of Arkansas for Medical Sciences, 2005;
B.S., Arkansas Tech University, 2006

[Top](#)

Kale Rudolph, 2007
Computer Information Systems Instructor
B.S., University of Arkansas, 1987;
M.S., Arkansas Tech University, 2007

[Top](#)

Daniel Schroyer, 2006
Facilities Maintenance/Management Instructor
Air Conditioning and Refrigeration, Arkansas Tech University - Ozark Campus, 2004

Bobby Sewell, 2006
Automotive Service Instructor
Automotive Service Technology, Arkansas Tech University - Ozark Campus, 1981;
Advanced Automotive Service Technology, Arkansas Tech University - Ozark Campus, 1982;
A.A.S., Arkansas Tech University - Ozark Campus, 2008

Adrienne Shelton, 2010
Occupational Therapy Instructor
B.S., Presbyterian College, 1987;
M.Ed., University of Arkansas at Little Rock, 1988;
Masters of Occupational Therapy, Texas Women's University, 1997

Vicky Spur, 2001
GED/ABE Instructor
B.A., Arkansas Tech University, 1990

David Straley, 2010
Viticulture/Enology Instructor
A.A.S., Napa Valley College, 1995

[Top](#)

Tammy Verkamp, 1997
English Instructor
B.A., Arkansas Tech University, 1981;
B.S., Arkansas Tech University, 1997;
M.Ed., Arkansas Tech University, 1999

Debbie Wofford, 1979
Business Technology Instructor
B.S., University of the Ozarks, 1977;
M.Ed., University of Arkansas, 1989

[Top](#)

General Information

The Campus

Arkansas Tech University - Ozark Campus is located along Arkansas Highway 23 North in Ozark, Arkansas. The city of Ozark, with a population of approximately 3,500, is located on the banks of the Arkansas River and is surrounded on the north and south, respectively, by the Ozark and Ouachita National Forests. Located to the west of Ozark is the city of Fort Smith, a commercial and industrial center for western Arkansas. To Ozark's northwest are the cities of Fayetteville, Springdale, Rogers and Bentonville, collectively known as some of the fastest growing commercial centers in the state. Russellville, home to Arkansas Tech University's main campus and an area of vigorous industrial development, is located to the southeast of Ozark on Interstate 40.

History

Arkansas Tech University - Ozark Campus was established in 1965 as Arkansas Valley Vocational Technical School (AVVTS). In September of 1975 the Arkansas State Board of Education/Vocational Education granted accreditation to AVVTS making it the first school of its kind in the state to receive that distinction. Arkansas Valley Vocational School became Arkansas Valley Technical Institute in 1991. On July 1, 2003, Arkansas Valley Technical Institute merged with Arkansas Tech University to become Arkansas Tech University - Ozark Campus.

University Mission Statement

Arkansas Tech University, a state-supported institution of higher education, is dedicated to nurturing scholastic development, integrity and professionalism. The university offers a wide range of traditional and innovative programs which provide a solid educational foundation for life-long learning to a diverse community of learners.

Ozark Campus Mission Statement

Arkansas Tech University - Ozark Campus, in partnership with the community, will provide a quality educational environment which will enable all students to learn the skills and acquire the knowledge necessary for them to become contributing members in the workforce and in society.

Programs of Study

In carrying out its mission, Arkansas Tech University – Ozark Campus offers programs of study leading to Associate of Applied Science degrees with options in the following areas:

Associate of Applied Science in Allied Health
Paramedic/Emergency Medical Services
Practical Nursing
Associate of Applied Science in Physical Therapist Assistant (pending approval)
Physical Therapist Assistant
Associate of Applied Science in Business Technology
Business Technology
Business Technology Banking
Business Technology Medical
Associate of Applied Science in General Technology
Air Conditioning and Refrigeration
Facilities Management option
Automotive Service Technology
Collision Repair Technology
Computer Information Systems
Cosmetic Science
Industrial Control Systems
Industrial Systems
Law Enforcement
Welding Technology

Programs of Study leading to technical certificates are offered in the following areas:

Air Conditioning and Refrigeration
Facilities Maintenance option
Automotive Service Technology
Business Technology
Business Technology Banking option
Business Technology Medical Transcription
Collision Repair Technology
Computer Information Systems
Cosmetology
Enology
Industrial Control Systems
Industrial Electronic Technology
Law Enforcement
Paramedic/Emergency Medical Services
Practical Nursing
Viticulture
Welding Technology

Programs of Study leading to certificate of proficiency are offered in the following areas:

Basic Emergency Medical Services Training
Certified Nursing Assistant
Intermediate Emergency Medical Services Training

Physical Plant

The physical plant of Arkansas Tech University - Ozark Campus includes nine buildings on approximately 26 acres. The Technology and Academic Support Building houses classrooms, the Library, administrative offices, Business and Industry, and the Student Success Lab. Other buildings on campus are: Air Conditioning and Refrigeration, Allied Health Building, Collegiate Center, Industrial Control Systems, Student Services and Conference Center, and the West Annex. The Booneville Training Site located in Booneville, Arkansas is also a part of the Ozark Campus facilities. All buildings are handicapped accessible. The cleaning and maintenance of all buildings and property is under the direction of the Physical Plant supervisor.

Inclement Weather Policy

In the event of inclement weather, Arkansas Tech University – Ozark Campus may be unable to operate our normal schedule. When campus is closed for inclement weather, the following television and radio stations will be notified by 6:00 a.m.:

KTCS Fort Smith
KDYN 96.7 Ozark
KHBS 40/29 Fort Smith
KFMS Channel 5 Fort Smith
KARK 4
KISR 93.7 Radio
B98 Radio 97.9
KMAG 99.1 Radio
Big Dog 95.9 Radio

When daytime classes are canceled, night classes are also canceled. The outlying areas sometimes experience inclement weather (snow, ice, and etc.). Even though the campus is not closed in these events, all faculty, staff, and students are advised to use their judgment in determining if the roads are safe to travel. Remember, your safety is our utmost concern!

Please note that our campus emergency notification text system will not be used to notify faculty, staff and students of campus closure due to inclement weather.

Severe Weather Policy

In case of severe weather, students will be notified and are asked to follow the emergency guidelines posted in each room.

Fees and Expenses

General

Tuition and all other fees and charges are due prior to the beginning of each term and payable in the Office of Student Accounts. Registration is not complete until all financial obligations have been satisfied. Failure to make financial settlement may result in cancellation of the student's class schedule.

Financial settlement, which consists of tuition and fees, 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 and payments may be made in person, online, or mailed to the Student Accounts office at 1700 Helberg Lane, Ozark, AR 72949. Students who wish to schedule payments for their account balance may enroll in a payment plan by accessing <http://stuacctts.atu.edu> and clicking on the eCashier link. If you choose this plan, the full account balance will be budgeted along with any subsequent charges incurred for the semester.

Billing statements are payable upon receipt. Student accounts issues bills electronically and they are accessible through each student's OneTech account. The current balance on a student's account may be accessed with the student's "T" number (identification number). Invoices for fall and spring are available approximately thirty days prior to the first day of class. For questions concerning billing please contact the Office of Student Accounts at 479-667-2950.

A credit balance on a student's account will be refunded to the student in the form of a check or direct deposit. You may enroll in direct deposit by accessing your account from the Student tab on OneTech and click on "Direct Deposit your Refund Check!" Funds are generally in your account by the second day after your refund appears on your student account.

Students may pick up refund checks and Student ID's in the Office of Student Accounts by presenting a photo ID.

Fees and Expenses

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 it is not possible, estimated charges are shown. Prices quoted are Arkansas Tech University-Ozark Campus students' tuition and fee rates currently in place for the 2009 -2010 academic year. The University reserves the right to change fees and charges at any time if conditions necessitate or permit the change.

Ozark Fees and Expenses	Technical	Undergraduate (General Education)
Tuition	\$70.00 per credit hour	\$170.00 per credit hour
Instructional Support Fee	\$2.00 per credit hour	\$2.00 per credit hour
Strategic Initiative Fee		\$10.00 per credit hour
Student Support Fee	\$5.00 per credit hour	\$5.00 per credit hour
Technology Fee	\$5.00 per credit hour	\$5.00 per semester
Allied Health Fee or CTE General Technology Fee*	\$10.00 per credit hour	\$10.00 per credit hour
IMRS Fee		\$4.00 per semester

*Certain Ozark Campus coursework only

Replacement of ID Card \$ 25.00

Parking Permit \$ 15.00

All students are required to have parking permits.

For information on Parking Fees and Fines, see "Traffic Regulations" on page 27 of this document.

For a full list of undergraduate fees and expenses please visit:

<http://www.atu.edu/academics/catalog/fees-expenses.html>

Payment of Accounts

Tuition and all other fees and charges are due prior to the beginning of each term at the Office of Student Accounts, located in the Student Services and Conference Center. Financial settlement, which consists of tuition and fees, 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. An alternate payment plan is offered via the web site: <http://stuacctts.atu.edu>. Registration is not complete until all financial obligations have been satisfied. Failure to make financial settlement may result in cancellation of the student's class schedule.

Monthly billing statements are electronic. Notification and information for access will be provided to students via the individual student e-mail address and online at <http://stuacctts.atu.edu>. Students are responsible for accessing billing statements and printing a paper copy if desired. In addition, paper copies will be mailed twice yearly shortly before the beginning of the fall and spring terms. Students registering between billing cycles are responsible for accessing their charges online or contacting Student Accounts to insure making correct payment by the required due date. Payment is due upon notification.

Students with delinquent accounts are not eligible for diplomas, 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 as well as to new students.

Reduction of Fees and Charges

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" on page vi, will receive an 80 percent reduction of tuition for courses in which they are enrolled in at the time of withdrawal. No reduction in tuition or fees 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.

Reduction of Tuition for Official Withdrawal

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" on page vi, will receive a 100 percent reduction of tuition and fees. 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 the time of withdrawal. No reduction in tuition 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.

If a student withdraws and 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 Academic Competitiveness Grant, Federal SMART Grant, Federal SEOG Program, Arkansas Department of Higher Education Programs, Arkansas Tech - Ozark 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 Office of Student Accounts.

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" on page vi, 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 dropping to fewer hours for the fall or spring semester by the end of 14 Arkansas Tech University - Ozark Campus the second day of the semester, as listed in the "Academic Calendar" on page vi, will receive a 100 percent reduction of tuition and fees for the courses dropped. Thereafter, students dropping to fewer hours before the end of the twenty-fifth day of the semester will receive an 80 percent reduction of tuition. 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.

Regulations and Procedures

All students must give prompt attention to communications from faculty and staff members of Arkansas Tech University - Ozark Campus. 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, plagiarism or misconduct.

If an occurrence of academic dishonesty or misconduct is detected, the instructor should refer to the "Conduct Violations" outlined in the Student Handbook for the appropriate procedures. The policies also outline procedures to appeal a charge of academic dishonesty if the student feels the charge was inappropriate.

Academic Misconduct

The faculty must also accept a responsibility to clarify and interpret for the students matters of academic misconduct especially those concerning the student's classroom behavior. For example, students may disrupt the learning environment in a classroom through inappropriate behavior, such as talking to students, unnecessary interruptions, attempting to monopolize the professor's attention, or being chronically late to class. Misconduct also covers verbal or nonverbal harassment and/or threats in relation to classes. Student behavior should not infringe on the rights of other students or faculty during a class.

Involvement in such activities as conspiracy or breaking and entering is to be reported to the Campus Safety Officer for appropriate action through regular institution's disciplinary channels.

Academic Probation

Students will be placed on academic probation whenever their semester grade point falls below 2.0 unless the cumulative grade point is 2.00 or higher. These criteria also apply to entering transfer students. Removal of probation will be accomplished by raising the cumulative grade point to 2.00 or higher.

Freshmen students who in a probationary semester fail to remove themselves will continue on probation for the following semester. Sophomore, junior and senior students who in a probationary semester fail to remove themselves but achieve a 1.75 semester grade point will continue on probation for the following semester unless the academic suspension policy applies.

Academic Suspension

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

Suspension means that the student will not be allowed to attend Arkansas Tech University - Ozark Campus 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 Chief Student Officer for a hearing. Students who meet the semester/year stipulation must file a request for readmission with the Office of Student Services.

Students on academic suspension who wish to transfer to Arkansas Tech University - Ozark Campus may be granted the opportunity to be conditionally admitted on academic probation.

Adding/Dropping Courses

The deadline for adding courses or changing courses or sections is given in the academic calendar (see "[Academic Calendar](#)"); thereafter, changing to audit or dropping a course are the only changes permissible. Courses officially dropped after the 11th class day and through the thirteenth week of a fall or spring semester will be recorded with a grade of "W." 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 Office of Student Services after obtaining written approval of their academic advisor. Failure to complete this procedure can result in a grade of "F" being entered on the student's record. 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 "FE". Courses dropped subsequent to this time will be recorded as "F" (see "[Academic Calendar](#)").

Auditing Courses

Auditing of courses requires official admission to the University, approval by the instructor involved, and payment of the regular fee for the course. Audit will be on a "space available" basis. Students auditing courses are subject to the same regulations as other students with regard to registration and attendance, but they do not take examinations or 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 thirteen weeks of the semester. Students enrolled for audit who do not wish to complete the course(s) must complete the 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 "FE". A student who is dropped from three courses in a semester for unsatisfactory class attendance may be immediately suspended.

Class Load Policy

It is 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 Chief Student Officer.

Course Overload

Students who enroll above the maximum loads without securing permission from the Chief Student Officer may be dropped from their classes. To be considered for a course overload, the student must submit a petition to the Chief Student Officer 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 Student Services.

Class Standing

Students with fewer than 30 semester hours are classified as freshmen, students Class Standing 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 - Ozark Campus 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 student who has previously attended Arkansas Tech University - Ozark Campus may qualify to request academic clemency providing the following criteria are met.

For pre-merger course work: After re-entering Arkansas Tech – Ozark, following a separation of at least three years, a student may request academic clemency at the Office of Student Services for approval by the Chief Student Officer.

For post-merger course work: 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 Arkansas Tech - Ozark. 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 or scholarships.

Conduct

Arkansas Tech University - Ozark Campus 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 Arkansas Tech University - Ozark Campus 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.

Honor Rolls

Students whose grade point at the end of each semester is 4.00 will be placed on the Chancellor's Roll for outstanding scholarship. Students whose grade point at the end of each semester is 3.50 or better will be placed on the Honor Roll. Recognition will be accorded these students through appropriate news media.

Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act (FERPA) affords student's certain rights with respect to their education records. They are:

1. The right to inspect and review the student's education records within 45 days of the day the University receives a request for access. Students should submit to the Registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they wish to inspect. The University official will make arrangements for access and notify the students of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request that the student's education records that the student believes are inaccurate or misleading be amended.

Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading.

If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic, research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, collection agent, or internship agreement); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by Arkansas Tech University to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Compliance Office
U.S. Department of Education
600 Independence Avenue, SW
Washington, D.C. 20202-4605
Directory Information

"Directory information" at Arkansas Tech University - Ozark Campus consists of the student's name, address, telephone listing, electronic mail address, dates of attendance¹, major field of study, enrollment status (e.g. undergraduate or graduate), participation in officially recognized activities and sports, weight and height of members of athletic teams, degrees, honors and awards received, and the most recent educational agency or institution attended.

This information may be made available upon request to members of the general public. If a student on the Ozark campus wishes for this information to be regarded as confidential, according to the provisions of the Family Educational Rights and Privacy Act of 1974, she/he should notify the Chief Student Officer at (479) 667-3433.

¹Dates of attendance means the period of time during which a student attends or attended an educational agency or institution. Examples of dates of attendance include an academic year, a spring semester, or a first quarter. The term does not include specific daily records of a student's attendance at an educational agency or institution.

Grading

Final grades are reported at the end of each semester. Mid-term grades are reported for freshmen only. A final 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 provided work already completed is of passing quality. 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. 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.

Final grades are reported at the end of each semester. Mid-term grades are reported for freshmen only. A final 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 provided work already completed is of passing quality. 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. 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. This form can be obtained from the Office of Student Services.

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 Chief Academic Officer.

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

Graduation

Please refer to the section entitled "Graduation Requirements" for information pertaining to degree audit, application for graduation, and other graduation requirements.

Repeated Courses

Students may repeat courses they have taken at Arkansas Tech University - Ozark Campus for the purpose of grade point adjustments (1) only by re-enrolling in the same courses at Arkansas Tech University - Ozark Campus and (2) subject to the following provisions. For repeated 1000- and 2000- level courses, only the grade from the best 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. **Students may not repeat a course in which the highest grade possible has already been earned.** Adjustments to cumulative grade points are not made for courses transferred from other colleges or universities.

Student Records

Student academic records are maintained in Office of Student Services. 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.

Traffic Regulations

AUTHORITY

In accordance with A.C.A. 25-17-307, the Board of Trustees of Arkansas Tech University establishes the following rules and regulations for the registration, operation, and parking of motor vehicles on Arkansas Tech University campuses. These rules and regulations are binding on all members of the faculty, staff, student body and others utilizing the lands owned or controlled by Arkansas Tech University. Lands owned or controlled by Tech will henceforth be known as the CAMPUS for the purposes of clarification in this brochure.

Arkansas Tech Department of Public Safety officers are constituted peace officers by A.C.A. 25-17-305, by action of the Board of Trustees, and under the laws of this state possess all the authority provided by law for city police and county sheriffs to be exercised as required for the safety and protection of the University community. Enforcement of traffic regulations on the Tech campus is the responsibility of the Department of Public Safety. All drivers will observe and obey the orders of the Department of Public Safety officers while such officers are engaged in the performance of their respective duties. This includes producing and rendering identification and hangtags requested.

YOU ARE RESPONSIBLE FOR COMPLYING WITH ALL RULES AND REGULATIONS.

REGISTRATION OF VEHICLES

Registration shall be accomplished at the time of regular registration for the fall, spring or summer semesters at the Office of Student Services or at locations and times specified.

Only hangtag may be registered per person and only one vehicle per person shall be parked on campus.

Vehicles are defined as any self-propelled vehicle having two or more wheels.

All vehicles on Tech campuses are required to register and display a current parking hangtag.

Hangtags are valid from August 15 one year through August 15 of the next year. After securing a hangtag at the Office of Student Services, charges are assessed to the individual's account at the Office of Student Accounts.

Hangtags must be displayed by hanging on the rear view mirror so the number can be read through the front windshield from the outside. These hangtags can be moved from vehicle to vehicle. Do not tape hangtag on vehicle or lay on dash or seat.

Lost/stolen hangtags are full price for replacement.

Summer term hangtags will be one-half the original cost.

Hangtags are the responsibility of the purchaser and must be removed prior to sale or transfer of the vehicle or upon termination of employment or withdrawal from the university.

Falsifying registration information, such as buying hangtags for another person in his/her name will be fined \$ 20.00. Also, the person who allows another individual to purchase a hangtag for him/her will be fined \$20.00.

Charges will be assessed at the time of registration of the vehicle as follows for all faculty, staff and students and other non-Tech employees.

A. \$15.00 for the calendar year (August 15 through August 15)

B. \$15.00 from the beginning of the second semester through August 15

Hangtags fees are non-refundable

Temporary Hangtags are available at the Department of Public Safety for faculty, staff and students who have misplaced their hangtag. These hangtags are provided at no cost and are valid for a maximum of seven days.

RESTRICTED PARKING AREAS

YELLOW CURBS RESTRICTED PARKING at all times.

FIRE ZONES-As marked.

RED-No students or ineligible employees between 7:30 a.m. and 5 p.m. Monday through Friday.

BLUE/WHITE-Designated disability parking zones. This includes ramps as well as parking spaces.

SIGNS-Restricted by signs posted.

ANY ATHLETIC OR DRILL FIELD-No parking at any time. these will not be posted. Arkansas Tech University reserves the right to set aside areas as necessary for special events in all parking areas of the University. The University further reserves the right to temporarily block certain streets as necessary without notice to the public.

TOWING AND IMPOUNDING OF VEHICLES

The University reserves the right to immobilize, tow and/or impound any vehicle that is parked on University property in such a way as to constitute a serious hazard; or any vehicle owned by a violator having three or more violations in any academic year. The Department of Public Safety may direct an authorized commercial garage to carry out any towing action. Violators will be responsible for paying all costs for removal, impounding and storage of such vehicles. Vehicles may be held until all charges are paid.

PAYMENT OF VIOLATIONS/FINES

A person receiving notice of a parking or traffic violation should go to the Office of Student Services to pay the fine placed against his/her account. The office is closed Saturdays, Sundays and holidays. Check the PARKING AND TRAFFIC REGULATIONS for a listing of all fines for violations.

MOVING VIOLATIONS

Moving violations include all traffic laws as stated in the Arkansas Motor Vehicle and Traffic laws and State Highway Commission Regulations. The official Tech parking citation notice placed on vehicles will be sufficient as summons for violation of these rules and regulations. In lieu of a University citation, the violator may be issued an Additional violation. Rules are as follows:

Speed limit on campus is 20 mph unless otherwise posted.

No U-turns

Yield the right-of-way to all pedestrians in campus crosswalks.

ACCIDENTS

All traffic accidents occurring on the campus or grounds controlled by the University must be reported immediately to the Department of Public Safety by calling on campus 479-508-3359. If you are unable to contact anyone at that number, call 911 and your call will be directed to the nearest Law Enforcement Agency.

DISABILITY PARKING

As required, a number of parking spaces have been set aside for use by handicapped individuals only. Each space has been marked with signs and or blue and white paint on the space.

Only individuals who have been issued, and are displaying, a disability license plate or placard issued by the State of Arkansas are permitted to park in spaces marked with blue and white stripes. Vehicles must also have valid Tech hangtag. License plates, decals and placards may be obtained from the State Revenue Office. Transfer of a disability license or placard is a violation of the Arkansas state law. The offender will be ticketed accordingly.

SPECIAL EVENT PARKING

Contact the person in charge of facilities use at 479-667-2117

VISITOR PARKING

Visitors are always welcome on campus and may park in any non-restricted area. Currently enrolled students or employees are not considered visitors. Visitors, please secure a visitor's hangtag at no cost at the Department of Public Safety.

MOTORCYCLES AND MOTORBIKE Motorbikes, motor scooters, motorcycles and bicycles must be operated only on streets normally designated for auto-mobile use. A hangtag must be displayed if parked on campus or an optional decal may be affixed to the left front fork.

APPEALS

All appeals will be dealt with according to the rules and regulations stated in this booklet. All appeals must be made within three school days. Appeals made after three school days will not be considered. All faculty, staff and students appeals should follow the above procedures. Appeals forms are available at Department of Public Safety.

PARKING REGULATIONS

All parking regulations will be enforced 7 days a week, 24 hours a day.

1. The responsibility for finding a legal parking space rests with the vehicle operator.
2. Lack of space is not a valid excuse for violating a parking regulation.
3. Standard parking/traffic regulations and definitions, as enacted in the Arkansas Motor Vehicle and Traffic Laws and State Highway Commission Regulations will be rigidly enforced on the Tech campus at all times, including legal holidays and the time between semesters when classes are not in session.
4. Violators of established Parking and Traffic Regulations may be issued a Uniform Traffic Ticket payable in Municipal Court in Ozark, Arkansas, in lieu of Tech citation.
5. Violation notices will be affixed to the motor vehicle or presented to the driver. Payment may be either mailed or paid in person at the Office of Student Services.
6. Vehicles are considered parked when left standing, stopped or unattended for any period of time.
7. It is illegal to re-use a ticket.
8. Pedestrians have the right-of-way at designated crosswalks at all times except at signal-controlled intersections where pedestrians will be expected to comply with the signal.
9. Students, faculty and staff members are expected to be familiar with and abide by the regulations at all times. The fact that any vehicle does not receive a violation notice while his/her vehicle is parked or operated in violation of any regulation or law does not mean or imply that such a regulation or law is invalid.
10. Due to evolving changes, signage will supercede zones as marked on the map.
11. Vehicles are assumed abandoned if left parked and stationary for a period of two weeks. Such vehicles will be towed at the owner's expense.
12. School buses and other large vehicles, as well as special purpose vehicles, are required to park in areas designated by the Department of Public Safety.
13. You are responsible for all violations by a vehicle displaying a hangtag issued in your name. If you lend your car, proper operation of the vehicle is still your responsibility.
14. Only one type of Tech hangtag is to be displayed on a vehicle at a time.
15. Obey regulatory signs and barricades established by the Department of Public Safety.
16. Vehicles will not be operated on the Tech campus without required safety equipment prescribed by the vehicle code of the State of Arkansas.
17. Vehicles parked in parallel parking spaces must be parked with the passengers' door to the curb with flow of traffic.
18. Vehicles will be parked within designated parking boundaries and in no case shall they overlap into or onto roadway, crosswalk or sidewalk. The fact that other vehicles are parked improperly shall not constitute an excuse for parking with any part of the vehicle over the line.
19. The time limit on 15 minute zones will be observed at all times.
20. A traffic ticket or any other communication from a Department of Public Safety officer, while in the performance of his duties, is considered to be an official University notice. Failure to respond will make the recipient subject to disciplinary action.
21. If a hangtag is not visible to the officer while he is issuing a citation, the citation will be for no current hangtag. If, in the course of issuing a citation, the officer discovers the hangtag, he has the discretion to downgrade that ticket to improper display only.
22. Windshields, side wings, side or rear windows may not be obstructed with any sign, sunshield, sun visor, poster or other transparent material other than a certificate or sticker required by state law or campus regulations. This will include writing on vehicle windows with shoe polish.
23. No boats, campers or trailers allowed to park on campus.

GENERAL INFORMATION

1. Operating a motor vehicle in any manner which may create a disturbance on campus may be considered a traffic violation. This includes excessive use (determined by city ordinance or officer's discretion) of boom box, stereo, horn, illegal exhaust systems, squealing of tires or placing pedestrians or other drivers in a hazardous situation.
2. All personnel, including visitors, are expected to adhere to all campus and state regulations regarding safety procedures.
3. Arkansas Tech University cannot and does not assume the obligation of providing parking spaces for all vehicles at all times.
4. Arkansas Tech University does not assume responsibility for the care and protection of any vehicle or its contents while said vehicle is operated or parked on the campus or lands controlled by the University.
5. Vehicles that do not qualify for registration or "approved as safe" by the State of Arkansas are not permitted on the campus at any time. Disabled and abandoned vehicles will be turned over to the State Police for disposal according to law.
6. Mechanical work other than minor repairs such as replacement of vehicle battery or flat tires will not be permitted on the Tech campus. Exception will be given to students working under the direction of the Automotive Service Department.
7. Arkansas Tech University reserves the right to restrict or revoke the use of an automobile on campus to anyone if the use of that vehicle is thought to be detrimental to the academic achievement of any student or if the person has abused the privilege of operating said vehicle on or off campus.
8. It shall be the responsibility of any driver of a disabled vehicle (i.e. dead battery, out of gas, keys locked in car, etc.) to immediately notify the Department of Public Safety of the problem and location of the disabled vehicle. Failure to make notification may result in the vehicle's being either towed or given a ticket. Abandoned vehicles shall be towed at the owners expense.
9. Flagrant disregard of campus parking and traffic regulations will result in the vehicle being towed to storage and parking privileges on campus revoked. Towing and storage charges will be assessed prior to the release of the vehicle to the owner.

Board of Trustee approval is requested for the following Parking Violations and Fines on the Ozark Campus.

Violation Fine	
Warning.....	\$00.00
Failure to display current hang tag.....	\$20.00
Unauthorized Handicapped Parking.....	\$100.00
Parking Where Prohibited by Signs.....	\$20.00
Parking in and Unauthorized Zone.....	\$20.00
Blocking.....	\$20.00
Failure to Stop or Yield Right of Way.....	\$25.00
Reckless Driving.....	\$50.00
Speeding.....	\$35.00

Any rates or fines contained in this document are subject to change.

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 Student Services. 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 Chief Student Officer 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 school reserves the right to adapt its policies as may be necessary.

Student Services Operations

Bookstore

The Arkansas Tech University - Ozark Campus Bookstore is located in the Alvin F. Vest Student Union. Textbooks, school supplies, and other items may be purchased. Information about required course materials and additional program costs can be accessed in the bookstore, financial aid office and online.

Disability Services for Students

Arkansas Tech University - Ozark Campus is committed to providing equal opportunities for higher education to academically qualified individuals who are disabled. Students with disabilities attending Arkansas Tech University - Ozark Campus will be integrated as completely as possible into the institution community. Arkansas Tech University - Ozark Campus 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 and without posing an undue hardship on the institution.

Services arranged through the Disabilities Coordinator include consideration of classroom and building accessibility, planning for adequate travel time between classes, note-taking assistance, alternative testing, and similar types of accommodations.

Arkansas Tech University - Ozark Campus 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 Technology and Academic Support Building, Arkansas Tech University - Ozark Campus, Ozark, AR 72949, and can be contacted through the Office of Student Services at (479) 667-2117.

Student Financial Aid

The primary purpose of student financial aid at Arkansas Tech University - Ozark Campus 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 institution 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 institution are considered supplementary to the efforts of the student's family in assisting their children with educational expenses. All awards are administered by the Financial Aid Office in accordance with the university's equal educational opportunity policy. Application forms for all types of aid may be obtained from the Financial Aid Office.

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, 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 post-secondary career of a student, the cost of a computer and related accessories up to \$1,500 purchased no earlier than four 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 with the costs being spread over the school year. 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 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: (479) 667-2117.

Scholarship Stacking Policy

Act 1180 of 1999 prohibits postsecondary institutions from using public funds in a student aid package which may contain a combination of state, institutional, private and federal funds, including Veteran's benefits, that exceeds the cost of attendance at the 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. In absence of direction from a private donor, private funds will be credited to the first semester attended unless they cause an over-award for the semester. In these cases, the scholarship will be divided equally between the current and following semester. For more information on the scholarship stacking policy, contact the Financial Aid Office: (479) 667-2117, extension 322.

Scholarships

Students may receive only one Tech funded 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. All students applying for a Tech scholarship must complete the FAFSA prior to scholarship deadlines. For more information on the scholarship stacking policy, contact the Financial Aid Office at the Ozark Campus.

Chancellor's Scholarship

Scholarships are awarded for Fall and Spring semesters only. Deadlines are: June 15 for the Fall semester and November 15 for the Spring semester. Student must have a minimum cumulative grade point average (GPA) of 3.25 and a minimum ACT score of 21 to apply. Applications are to be submitted to the Financial Aid Office at the Ozark Campus. Students must reapply each semester for the scholarship.

Academic Excellence Scholarship

Scholarships are awarded for Fall and Spring semesters only. Deadlines are: June 15 for the Fall semester and November 15 for the Spring semester. Student must have a minimum cumulative grade point average (GPA) of 3.00 and a minimum ACT score of 19 to apply. Applications are to be submitted to the Financial Aid Office at the Ozark Campus. Students must reapply each semester for the scholarship.

ATU - Ozark Campus Scholarship

Scholarships are awarded for Fall and Spring semesters only. Deadlines are: June 15 for the Fall semester and November 15 for the Spring semester. Any student demonstrating financial need may apply. Preference will be given to students experiencing financial hardship and who do not qualify for other aid. Applications are to be submitted to the Financial Aid Office at the Ozark Campus. Students must reapply each semester.

Academic Standards for Students Receiving Financial Aid

This satisfactory academic policy (SAP) applies to funds received through the Federal Pell Grant, the Federal Work Study, the Federal Perkins Loan, the Federal Supplement Educational Opportunity Grant, the Federal Subsidized Direct Loan, the Federal Unsubsidized Direct Loan, and the Federal Parent Loan (Plus) for Undergraduate Students.

Through Federally Funded 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 SAP policy. Noncompliance with any section will result in loss of aid. Financial Aid will not be paid retroactively for any semester's lost eligibility.

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 student's responsibility to notify the Financial Aid Office when they are no longer on the suspension list.

Satisfactory Academic Progress

Undergraduates

1. 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
1	9
2	21
3	33
4	48
5	60
6	72
7	84
8	96
9	108
10	120

NOTE: ALL part-time students must always earn the number of hours in which they are enrolled. Incomplete, repeat, and audit classes are counted as hours attempted. 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 courses. Students may use summer hours earned at Tech to fulfill the academic progress requirement. Hours earned at another institution will not meet the requirement.

2. **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 "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.

3. A student must receive a bachelor's degree by the end of six (6) years of full-time attendance, an associate's degree by the end of three (3) years of full-time attendance and a certificate by the end of one and one-half (1.5) years of full-time attendance. Allowances will be made for semesters involving required remedial course work and certificates which require more than one year. All fall and spring semesters attended will be counted whether a student received financial aid during the semester or not. Students may use summer hours earned at TECH to fulfill the academic progress requirement. Hours earned at another institution will not meet the requirement. Less than full-time semesters will be counted proportionally. (See chart below:)

1 - 5 hours	.25 semester
6 - 8 hours	.50 semester
9 - 11 hours	.75 semester
12+ hours	1 semester

4. Students granted academic clemency will have all semesters attended counted on the basis of attempted hours and actual attendance.

Subsequent Credentials

1. Full-time students must earn an average of twelve hours per semester; part-time students must earn the hours for which they enroll each semester.

2. Funds may be received for no more than three certificates and two associate degrees.

Required Grade Point Average

1. All students must have a minimum cumulative grade point average (GPA) of 1.0 at the end of their first semester, 1.50 at the end of their second semester, 1.75 at the end of their third semester and 2.0 at the end of their fourth and all following regular (fall and spring) semesters or "equivalent transfer semesters." Example: A student who earns 24 hours in four half-time semesters would be required to have a 2.0 at the end of the fourth semester. While a student who earns 24 hours in two full-time semesters would still have two additional semesters before a 2.0 GPA would be required. To continue on aid, this GPA must be maintained for all remaining semesters. No appeal will be granted for anyone in violation of the required cumulative 2.0 GPA.

2. Any student who fails to meet the required 2.0 GPA will be reinstated once the required GPA is met. However, financial aid will not be paid retroactively for any aid lost because of this requirement.

It is the student's responsibility to notify the Financial Aid Office when they have attained the required GPA.

Subsequent Credentials

Students must maintain a 2.0 G.P.A. each semester.

Withdrawals	<p>During each undergraduate career, a student receiving aid may completely withdraw ONE SEMESTER ONLY or receive all grades of "F" and return the next semester to receive all entitled financial aid. Upon withdrawing any additional semesters or receiving all grades of "F" while on financial aid, the student will not receive aid for their next period of enrollment. The next period of enrollment hours must be equivalent to the number of hours enrolled during the 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.)</p> <p>Federal regulations require a calculation to determine how much aid, if any, must be returned to the Federal programs when a student withdraws or receives all grades of "F". Students who must repay funds will be notified of the amount by the Financial Aid Office.</p>
Application for Federal Student Aid	<p>General – Students use the Free Application for Federal Student Aid (FAFSA) (File online at www.fafsa.ed.gov) and list Arkansas Tech University, Russellville AR (001089) as one of the schools to receive information. Federal Student Aid includes grants, loans and work study.</p> <p>Priority Deadline – To receive equal consideration, a student must have a complete application on file by April 15 for fall and October 15 for spring. 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.</p>
Federal Pell Grant	<p>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.</p> <p>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.</p>
Federal Supplemental Educational Opportunity Grant	<p>The purpose of the Supplemental Educational Opportunity Grant (SEOG) is to provide additional funding for students who have exceptional need determined by the FAFSA application. Each grant is awarded according to federal guidelines and is offered on a first come first serve basis.</p>
Student Employment	<p>When funds are available, the institution uses student employees when practicable, but students are not encouraged to work to an extent which would hinder their scholastic program.</p> <p>Employment assignments are made under the institutional Non-Work-Study Program. To be eligible for student employment, the student must be enrolled at least half-time, 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 Arkansas Tech University - Ozark Campus. Prospective student employees can visit the website or check job postings located in the Technology and Academic Support building.</p>
Federal Direct Education Loans	<p>Students may borrow money to help defray the cost of attendance at postsecondary institutions through the Direct Student Loan Program. Federal regulations require a delayed disbursement of thirty days for all first-year, first-time borrowers. All students must be enrolled in a minimum of six semester hours to receive loans. Arkansas Tech University – Ozark Campus offers students two loan choices, the Direct Subsidized Loan and the Direct Unsubsidized Loan. A student must complete a FAFSA application to receive these loans. The total borrowed under each program may not exceed the student's yearly maximum under federal regulations.</p>
Federal Direct Subsidized Loans	<p>The Direct Subsidized Loan program authorizes loans up to \$3,500 per year undergraduates and all certificate students and \$4,500 for second year students. Under this program, a student must have sufficient financial need determined by the FAFSA application to receive a Direct Subsidized Loan. The interest is subsidized on this loan while the student is enrolled in school. Interest rates are fixed, but vary each year. 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.</p>
Direct Unsubsidized Loans	<p>A student does not have to meet the same financial need to qualify for the Direct Unsubsidized Loan as on the Direct Subsidized Loan. The student must complete a FAFSA application to receive this loan. The interest is not subsidized on this loan while the student is enrolled in school. It starts accruing thirty days after first disbursement. Interest rates are fixed, but vary each year. Repayment of principal and accrued 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.</p>
Direct PLUS Loans	<p>Parents of students may borrow annually the amount of the student's cost of attendance minus other aid for each child who is enrolled at least half-time and is a dependent undergraduate student. Direct PLUS Loans are limited to parents who do not have an adverse credit history. The Direct PLUS loan has a fixed interest rate with the parent borrower beginning payment within sixty days of disbursement. All loan checks will be written as co-payable to the parent and the educational institution.</p>
Over 60 Tuition Waiver	<p>Students who are sixty or older may have tuition and fees waived upon completion of certification of eligibility. Students must notify the Financial Aid Office each semester of the number of enrolled hours which need to be waived. Applications are available in the Financial Aid Office.</p>
Workforce Investment Act	<p>The Workforce Investment Act (WIA) is a Federal program designed to provide training for unemployed or underemployed persons if definite employment opportunities are available in a training field. Financial assistance may cover tuition, books, fee/supplies, and transportation. A student wanting to make application for WIA assistance should call or write to a local employment office or career development center. Information concerning the programs of study available to WIA eligible candidates may be obtained from the Arkansas Tech University - Ozark Campus Financial Aid Office in the Administration Building or call (479) 667-2117, extension 322.</p>

American Indian Center	The American Indian Center (AIC) helps to provide financial assistance for students seeking training opportunities. The student must have a Certificate of Degree of Indian Card (CDIB Card) and meet certain financial eligibility requirements. AIC helps students of Cherokee, Choctaw, Chickasaw, Creek and Seminole ancestry. Applications can be requested from the the American Indian Center, 1100 N. University, Suite 143, Little Rock, AR 72207. AIC's telephone number is 1-800-441-4513.
Veterans Benefits	<p>Arkansas Tech University - Ozark Campus is approved by the State Approving Agency for Veterans training as a school (college, university, etc.) whereby veterans and dependents of deceased or disabled veterans may obtain subsistence pay while working toward a degree. Eligible students should contact the financial aid office at Arkansas Tech University - Ozark Campus to obtain information regarding school attendance under the following programs: 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; Title 10, Chapter 1606, Montgomery GI Bill for Selective Reserves; Title 32, Chapter 1607, Reserve Educational Assistance Program (REAP); and Title 5, Chapter 33, Post 9/11 Veterans Educational Assistance Act.</p> <p>All students must be working toward an Associate of Applied Science degree or a Technical Certificate and should follow the curriculum outline for their objectives. Only specific courses in the student's major can be certified to Veterans Affairs (VA) on the student's behalf. Veterans may be given placement credit for prior military training. Enrollment certification will not be sent to the VA until the student has been admitted into the university and has completed a certification request form.</p>
Arkansas Human Development Corporation	The purpose of this program is to provide educational assistance to qualified students under AHDC's farm workers program. The program may pay tuition, fees, books, supplies, and a weekly allowance to the trainee. To be eligible, an independent student must have derived 51% of his/her gross income from the past year from farm-related employment or be a dependent of a farm worker who derived 51% of his or her gross income from farm work. The AHDC representative will make the determination as to student eligibility. Contact telephone number 479-783-1854.
Arkansas Rehabilitation Services	This program may pay for the eligible student's tuition, fees, books, and supplies. To receive financial assistance under this program, a student must have a physical or mental disability that has been diagnosed as a handicap, have a financial need, and be approved by the area rehabilitation counselor. A student wanting to make application for rehabilitation assistance should call or write to a local rehabilitation office.
American Opportunity, Hope and Lifetime Learning Credits	Students may qualify for the American Opportunity Credit and a Hope Scholarship Credit or Lifetime Learning Credit on the Federal Income Tax return. Students are mailed a 1098T form each year from the student accounts office. Qualified tuition and fees, excluding MPI, are the only eligible expenses which may be claimed by a qualified taxpayer. If a student receives financial assistance to pay the qualified tuition and fees, the taxpayer is not eligible for the credit.
Arkansas Department of Higher Education	<p>The Arkansas Department of Higher Education has various state scholarships that are available each year for qualified Arkansas students. They administer such programs as the:</p> <ul style="list-style-type: none"> Academic Challenge Scholarship (Lottery) Governor's Scholars Program Higher Education Opportunity Grant (GO! Grant) State Teacher Education Program (STEP) Teacher Opportunity Grant (TOP) Military Dependents' Scholarship <p>Applications for these programs are now under a new universal application found online at http://www.adhe.edu/ The application is titled "YOUiversal Application." You may visit the website or write Arkansas Department of Higher Education, 114 East Capitol, Little Rock, AR 72201 or telephone ADHE at 1-800-547-8839.</p>
Arkansas Academic Challenge Scholarship Lottery Scholarship	<p>The new Arkansas Lottery will provide funding for the new Arkansas Academic Challenge Scholarship to encourage academically minded traditional and non-traditional students to enroll in Arkansas' colleges and universities and to promote academic degree achievement for Arkansas residents. Arkansas Lottery funds have made it possible to expand the traditional Arkansas Academic Challenge Scholarship program to include previously un-served Arkansans known as nontraditional students as well as traditional students.</p> <p>A nontraditional student is defined as "a student who is not a traditional student." A traditional student is defined as, "a student who will enter postsecondary education as a full-time first-time freshman within twelve (12) months after graduating from high school and remains continuously enrolled as a full-time student. Near-completers in college, delayed starters, returning students, and earn-in students will now be able to apply for the Arkansas Academic Challenge Scholarship. This opens the door for GED completers once they have attended a full time semester of college and have maintained a 2.5 overall GPA, where as before, were not eligible.</p> <p>The scholarship provides awards to students based on the postsecondary institution's degree award level. For 2010-2011, the annual award amount will be \$5,000 for 4 year institutions and the award amount for a 2 year institution will be \$2,500. Arkansas Tech University - Ozark Campus students will be awarded at the 2 year annual award amount of \$2,500. These amounts are subject to change pending changes in the Arkansas Lottery program.</p> <p>For all rules and regulations regarding the new Arkansas Academic Challenge Scholarship, visit the Arkansas Department of higher Education's web site at: http://adhe.edu/.</p> <p>The Arkansas Department of Higher Education has a new "YOUiversal" application online for students to apply for the Arkansas Academic Challenge Scholarship and for various other scholarships.</p>
Activities and Organizations	Arkansas Tech University - Ozark Campus offers several activities and organizations for its students. There are few members of the student body who do not take part in one or more of these activities.
Arkansas LPN Association	<p>Practical Nursing Students belong to the Arkansas Licensed Practical Nursing Association and the National Association of Licensed Practical Nurse. The activities of the Arkansas LPN Association are an integral part of the instructional program that provides occupational skills as well as leadership skills.</p> <p>The Arkansas LPN Association provides workshops and speakers on current nursing needs and skills.</p> <p>The students are assisted in developing the skills and abilities that will lead to successful employment in the nursing profession.</p>

National Technical Honors Society

The National Technical Honor society requires members to maintain a high standard of personal and professional conduct at all times, strive for excellence in all aspects of education and employment, refuse to engage in or condone activities for personal gain at the expense of their fellow students, school or employer.

Students interested in joining the society must maintain an overall grade point average of 3.0 or higher, a 3.25 grade point average in courses in their majors; have one or more faculty members' recommendation; and active involvement in student government, CTSO, civic or service organization.

Phi Beta Lambda

Phi Beta Lambda (PBL) is the national organization of students enrolled in programs of business education or computer information systems on the post-secondary level. The organization, composed of more than 450 chapters, operates as a liaison between instructors, state supervisors, school administrators, and members of the business community.

The activities of PBL provide opportunities for business students to establish occupational goals and facilitate the transition from school to work. Members of PBL learn how to engage in individual and group business enterprises, how to hold office and direct the affairs of the group, how to work with other organizations and how to compete honorably with their colleagues on the local, state, and national levels.

PBL helps build competent, aggressive business leadership; strengthen the confidence of students in themselves and in their work; develop character; prepare for useful citizenship; foster patriotism; and practice efficient money management.

Skills USA

Skills USA is active at all state post-secondary schools. Membership in these clubs is open to students, former students, and other persons interested in the various career fields represented.

The purpose of Skills USA clubs is to help the student develop social and leadership skills. Activities which enhance the development of these skills will be conducted by the clubs' members and advisors. The activities may include events between post-secondary schools and between students, such as parliamentary procedure contests between schools, troubleshooting contests for Automotive Service Technology students, etc.

Each club elects officers from its membership to serve as follows: President, Vice President, Secretary, Treasurer, Reporter, and Parliamentarian.

Student Government Association

A Student Government Association is elected each school year at Arkansas Tech University - Ozark Campus. This group consists of seven elected officials. They will be representing the student body during school activities. They will also be responsible for planning student activities throughout the year. The Student Government Association selects the outstanding student of the year at Arkansas Tech University - Ozark Campus. This student will be given the Bob Adams Outstanding Student Award at graduation each year.

Curricula

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

Associate of Applied Science in Allied Health	
EMTP	Paramedic/Emergency Medical Services
LPN	Practical Nursing
HIT	Health Information Technology
CNA	Certified Nursing Assistant (Certificate of Proficiency only)
Associate of Applied Science in Business	
BUS	Business Technology Business Technology - Banking option
Associate of Applied Science in General Technology	
ACR	Air Conditioning/Refrigeration
FAC	Facilities Management
AST	Automotive Service Technology
CIS	Computer Information Systems
COS	Cosmetic Science
CRT	Collision Repair Technology
ICS	Industrial Control Systems
LE	Law Enforcement
VIN	Viticulture / Enology
WLD	Welding Technology
Associate of Arts	
ART	Art
AMST	American Studies
ANTH	Anthropology
BIOL	Biology
CHEM	Chemistry
COMS	Computer Information Science
ECON	Economics
ENGL	English
GEOG	Geology
HIST	History
JOUR	Journalism
MATH	Mathematics
MUS	Music
PHIL	Philosophy
PHSC	Physical Science
PHYS	Physics
POLS	Political Science
PSY	Psychology
READ	Reading
RP	Recreation and Park Administration
SOC	Sociology
SPH	Speech
TH	Theatre
Associate of Applied Science in Occupational Therapy Assistant	
OTA	Occupational Therapy Assistant
Associate of Applied Science in Physical Therapist Assistant	
PTA	Physical Therapist Assistant
Associate of Applied Science in Industrial Systems	
ICS	Industrial Control Systems

Administration

Board of Trustees

Charles Blanchard.....Russellville
 John E. Chambers III.....Danville
 Tom Kennedy.....Little Rock
 Leigh Burns Whiteside.....Russellville

Board of Advisors

Tom Banhart.....Van Buren
 Bruce Coleman.....Mountainburg
 C.A. Kuykendall.....Ozark
 Jimmy Rofkahr.....Scranton
 Bill Rue.....Ozark
 Donald Smith.....Cecil
 Jerry Standridge.....Booneville
 Ron Vest.....Ozark

Administrative Officers

Robert Charles Brown, 1993 President
 B.A., Northwestern State University, 1967
 M.A., Louisiana State University, 1969
 Ph.D., Louisiana State University, 1976

Jo Alice Blondin, 2004 Chancellor
 B.A., Purdue University, 1993
 M.A./Ph.D., Arizona State University, 1998

Bruce Sikes, 2007..... Chief Academic Officer
 B.S.E., University of Central Arkansas, 1986
 M.S.E., University of Central Arkansas, 2000

Sandra D. Cheffer, 2004..... Chief Fiscal Officer
 B.S., Illinois State University, 1990
 M.B.A., Olivet University, 1999

Richard Harris, 2007..... Chief Student Officer
 B.A., Arkansas State University, 1997
 M.P.A., Arkansas State University, 1999

Ken Warden III, 2009.....Chief Business and Community Outreach Officer
 A.A.S., Westark Community College, 1993
 B.S., University of Arkansas, 2001
 M.Ed., Arkansas Tech University, 2006

Administrative Staff

Jessica Birchler.....Coordinator of Student Recruitment
 Daniel Bush.....Career Support Services Facilitator
 Heidi Gregory..... Counselor of Career Pathways Initiative
 Tara Johnson..... Director of Career Pathways Initiative
 Brad Kent.....Adult Education Coordinator
 Megan Morris.....Associate Director of Advising and Retention
 Christa Nehus.....Assistant Manager of Fiscal Affairs
 Laura Rudolph..... Director of Public and External Relations
 Jason Salmans..... Associate Director of Computer Services
 Brenda Shoop..... Associate Registrar
 Kristie Moore..... Librarian
 Deborah Wood..... Director of Financial Aid

**Support Services
Staff**

Sandra Anderson..... Physical Plant Maintenance Supervisor
Kathy Bartlett..... Office of Academic Affairs
Dianne Bell..... Office of Student Accounts/Purchasing
Tracy Chapman..... Physical Plant Maintenance
Linda Clifton..... Office of Student Services
Peter Clifton..... Physical Plant Maintenance
Debbie Edgin..... Office of Student Services
John Gwatney..... Physical Plant Maintenance
Stacie Harden..... Office of Student Accounts/Payroll
Faith Johnson..... Office of Student Services
Sharyl Moffit..... Office of Allied Health
Beverly Nehus..... Office of the Chancellor/Assistant
Sandra Nelson..... Career Pathways Initiative
Mehedi Rajib..... Software Support Specialist
Chris Rambo..... Public Safety Officer
Mitzi Reano..... Office of Human Resources
Stuart Russell..... Career Pathways Initiative Instructor
Amy Scaccia..... Bookstore
Julie Schmalz..... Office of Student Services/Financial Aid
Charles Stacy..... Physical Plant Maintenance

Graduation Requirements

Associate of Applied Science degrees are offered in allied health with major areas of emphasis in paramedic/emergency medical services, health information technology, and practical nursing; business technology; business technology banking; physical therapist assistant; occupational therapy assistant; industrial systems technology; general technology with major areas of emphasis in air conditioning and refrigeration, automotive service, computer information systems, cosmetic science, collision repair, facilities management, industrial control systems, law enforcement and welding. Arkansas Tech University - Ozark Campus is seeking ACOTE approval for an Associate of Applied Science degree in Occupational Therapy Assistant.

Technical certification is offered in air conditioning and refrigeration, automotive service technology, business technology, business technology banking, collision repair technology, computer information systems, cosmetology, enology, facilities maintenance, health information technology, industrial control systems, industrial electronics technology, law enforcement, paramedic/emergency medical services, practical nursing, viticulture and welding technology.

Proficiency certification is offered in nursing assistant, basic emergency medical services and intermediate emergency medical services.

Effective Fall 2005 new, transfer, or returning students must choose to complete requirements for graduation under the provisions of the 2005 - 2006 Arkansas Tech University - Ozark Campus catalog or any subsequent 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 Office of Student Services if significant curriculum changes have occurred.**

For effective use of the result of its constant reexamination of student needs 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.

Candidates for graduation must complete a degree audit and an application for graduation. Students completing graduation requirements at the end of the fall semester must submit to the Office of Student Services an application for graduation and complete a degree audit in consultation with their advisor on or before the end of the eighth week of the previous spring semester. Students completing graduation requirements at the end of the spring semester or either of the following summer sessions must submit an application for graduation and complete a degree audit in consultation with their advisor on or before the end of the eighth week of the previous fall semester.

Students who file an application for graduation but fail to complete all graduation requirements as planned must submit a new degree audit and new application.

Degree Audit and Application for Graduation

Candidates for graduation must complete a degree audit and an application for graduation. Students completing graduation requirements at the end of the fall semester must submit to the Office of Student Services an application for graduation and complete a degree audit in consultation with their advisor on or before the end of the eighth week of the previous spring semester. Students completing graduation requirements at the end of the spring semester or either of the following summer sessions must submit an application for graduation and complete a degree audit in consultation with their advisor on or before the end of the eighth week of the previous fall semester.

Students who file an application for graduation but fail to complete all graduation requirements as planned must submit a new degree audit and new application for graduation.

Financial Obligation

Before any transcript is issued, the student must have paid any debt owed the university.

Graduation Honors

The Associate of Applied Science degree with honors will be conferred upon candidates who at graduation have earned a minimum grade point average on all courses taken post-merger at Arkansas Tech as follows: Summa Cum Laude—3.900 - 4.000, Magna Cum Laude— 3.700 - 3.899, Cum Laude—3.500 - 3.699. Graduation honors will be determined by work taken at Arkansas Tech only. **This policy is effective July 1, 2003 for the Ozark Campus. Previously enrolled students should contact the Office of the Student Services for clarification of the policy.**

Commencement Participation

Participation in commencement is required of all candidates for degrees except in cases involving hardship. The student may officially petition the Chief Student Officer for the degree to be awarded in absentia.

Students taking courses at other institutions must have official transcripts submitted to the Registrar's Office and have completed all degree requirements prior to the commencement ceremony to be allowed to participate.

Students who do not have a minimum grade point of 2.00 in the major and overall will not be eligible to participate in the commencement ceremony.

Academic regalia shall be worn by the student during the graduation ceremony. The academic regalia will consist only of the cap and gown. No decorations, writings, necklaces, braids, pins, cords, medallions or other items other than the Arkansas Tech University Honors cord and medallion shall be worn or placed on the academic regalia.

Diplomas are mailed to graduates following commencement.

Requirements for Associate of Applied Science Degrees

The requirements for the associate of applied science degree are outlined under each program of study. Associate of applied science programs include a general education component consisting of a minimum of 15 semester credit hours in English, mathematics, social sciences, and computer applications. In addition to the general education component, each program will require a technical component consisting of 45-56 hours. Students completing AAS degrees will have:

- The ability to contribute and function in a collaborative environment.
- The ability to identify, analyze and solve technical problems.
- The ability to communicate effectively.
- A recognition of the need for and ability to engage in lifelong learning
- An ability to understand professional, ethical, and social responsibilities.
- A commitment to quality, timeliness, and continuous improvement.
- An ability to utilize and apply critical thinking skills.
- An ability to apply knowledge and skills required to function in a specific technical discipline.
- A commitment to apply environmental awareness and responsibility to personal and professional daily life.

Please refer to individual programs of study for specific requirements. In addition to completing the necessary hours prescribed, candidates for associate of applied science degrees must meet the following requirements:

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, military service, or credit by examination work may be applied as credit towards a degree.

B. Hours of Credit and Grades

1. Refer to major field of study for semester hour requirements.
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. Students must have a 2.00 grade point in their major.
3. No more than 50% of technical coursework may be transferred into a program.
4. An official record of any correspondence or transfer work completed at another institution must be on file in the Office of Student Services prior to the end of the semester or term in which graduation is planned.

Requirements for Additional Degrees

To complete an additional associate of applied 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" above.

Students pursuing an associate of applied science degree must use the Arkansas Tech University - Ozark Campus catalog in effect at the time they first enroll or any subsequent Tech catalog provided they were enrolled at the University during the year the catalog was in effect. No catalog prior to 2005 - 2006 may be selected.

Associate of Arts 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. This degree is available through the Arkansas Tech University main campus. To qualify for the associate of arts in general studies, the student must satisfy the associate degree requirements and complete the following curriculum:

Curriculum	Hours
General Education Courses ¹	37
Electives	25
Total	62

¹See "[General Education Requirements](#)"

General Education Requirements

The general education curriculum is designed to provide a foundation for knowledge common to educated people and to develop the capacity for an individual to expand that knowledge over his or her lifetime. Students who have completed the general education curriculum at Arkansas Tech University will be able to:

- Communicate effectively
- Think critically
- Develop ethical perspectives
- Apply scientific and quantitative reasoning
- Demonstrate knowledge of the arts and humanities
- Understand wellness concepts

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.

English – 6 hours

(See Course Descriptions for minimum grade requirements)

Three hours from one of the following:

ENGL 1013 Composition I

ENGL 1043 Honors Composition I

Three additional hours from one of the following:

ENGL 1023 Composition II

ENGL 1053 Honors Composition II

Mathematics – 3 hours

(See Course Descriptions for minimum grade requirements)

Three hours from one of the following:

MATH 1003 College Mathematics

MATH 1113 College Algebra

Any higher level mathematics course

Science – 8 hours

Four hours of a biological science with laboratory from one of the following:

BIOL 1014 Introduction to Biological Science OR

Any higher level biology course that includes a lab (Note that **BIOL 1014** is specifically designed to meet general education objectives and is highly recommended unless you meet the prerequisites for a different course specified by your major).

Four additional hours of a physical science with laboratory from one of the following:

PHSC 1013 Introduction to Physical Science AND
PHSC 1021 Physical Science Laboratory
CHEM 1114 Survey of Chemistry
CHEM 2124 General Chemistry I
GEOL 1004 Essentials of Earth Science
GEOL 1014 Physical Geology
PHYS 1114 Applied Physics
PHYS 2014 Physical Principles I
PHYS 2024 Physical Principles II
PHYS 2114 General Physics I
PHYS 2124 General Physics II
PHSC 1053 Astronomy AND PHSC 1051 Observational Astronomy Lab OR
PHSC 3053 Astronomy AND PHSC 3051 Observational Astronomy Lab

Physical Activity – 2 hours

Two hours from the following:

Physical education activity courses
Recreation (RP) coeducational activity courses
Wellness science activity courses
Theatrical dance activity
Appropriate military science courses completed through cross-enrollment agreement with UCA.

Fine Arts – 3 hours

Three hours from one of the following:

*ART 2123 Experiencing Art
MUS 2003 Introduction to Music
TH 2273 Introduction to Theatre
*ENGL 2173 Introduction to Film
*JOUR 2173 Introduction to Film

Art Majors:

Art Education Majors Take ART 2123

Fine Arts and Graphic Design majors take any of the above options except ART 2123

Music Majors:

Any of the above course options except MUS 2003

Humanities – 3 hours

Three hours from one of the following:

*ENGL 2003 Introduction to World Literature
ENGL 2013 Introduction to American Literature
PHIL 2003 Introduction to Philosophy

Social Sciences – 12 hours

Three hours from one of the following:

HIST 2003 U.S. History I
HIST 2013 U.S. History II
HIST 1903 Survey of American History
POLS 2003 American Government
Nine additional hours from the following:
*HIST 1503 World Civilization I
*HIST 1513 World Civilization II
HIST 2003 U.S. History I
HIST 2013 U.S. History II
POLS 2003 American Government
ECON 2003 Principles of Economics I
SOC 1003 Introductory Sociology
PSY 2003 General Psychology
*ANTH 1213 Introduction to Anthropology OR
*ANTH 2003 Cultural Anthropology
*GEOG 2013 Regional Geography of the World
AMST 2003 American Studies

*Of the above 18 hours in Fine Arts, Humanities, and Social Science, three hours must be from one of the following:

ART 2123 Experiencing Art
ENGL 2173 Introduction to Film
JOUR 2173 Introduction to Film
ENGL 2003 Introduction to World Literature
HIST 1503 World Civilization I
HIST 1513 World Civilization II
ANTH 1213 Introduction to Anthropology OR
ANTH 2003 Cultural Anthropology
GEOG 2013 Regional Geography of the World

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."

ACR 1203 FUNDAMENTALS OF ELECTRICITY

The characteristics of alternating current, waves, phase relations, transfer action, electrical circuits, and its use with controls, motors, relays, resistors, including legends and symbols are taught. In addition, the student will study the wide variety of motors, single and three phase, used in the air conditioning and refrigeration field.

ACR 1205 TUBING AND PIPING

This course covers the process of identifying tubing and pipe with practical applications in sizing and fitting to different configurations using mechanical fittings and soldering. The history and development of air conditioning is also covered. Silver branding and aluminum soldering is also taught. Practical application is provided in the laboratory. Safety is emphasized.

ACR 1222 INDUSTRIAL CONTROLS

Designed to teach the student how to set up a control system for different types of control requirements. Different types of control methods are studied, such as PLC, digital and microprocessor systems.

ACR 1301 INDUSTRIAL SAFETY IN AIR CONDITIONING AND REFRIGERATION

The hazards associated with the different refrigerants, electricity, the oxy-acetylene torch, radon, carbon monoxide, extreme heat and extreme cold will be addressed.

ACR 1302 BASIC COMPRESSION AND REFRIGERATION

A comprehensive study of mechanical refrigeration systems emphasizing proper service techniques through analysis of the problem. Testing procedures, parts removal and installation are covered in depth. Also included is a study of the computation of temperature - pressure relationship and related problems.

ACR 1503 ELECTRONIC COMPONENTS

The student will study the wide variety of motors used in the air conditioning and refrigeration field. In addition, various system controls, relays, resistors, contactors, and timers are concepts that will be taught as they relate to motors and their operation.

ACR 1602 SCHEMATICS

The student will learn to read, draw, and interpret wiring diagrams and to place the circuitry in operative arrangements with electrical and electronic symbols. System diagrams will be developed by the student for a wide variety of A/C equipment.

ACR 2102 RESIDENTIAL SYSTEMS

Pre-requisite: ACR 1203 and ACR 1302. This course is a study of the major components and control devices for gas and oil furnaces, hydronic systems, heat pumps, and cooling systems.

ACR 2104 HEAT GAIN AND LOSS

Pre-requisite: ACR 1302. A study of air properties and the instrumentation to meet the environmental needs of structures, residential and commercial, and the factors involved in the calculation of heating and cooling loads. Also included, is a study of the distribution mediums such as duct design and sizing.

ACR 2112 AIR CONDITIONING SERVICE

This course includes a comprehensive study of air conditioning systems which emphasizes proper service techniques through analysis of the problem. Testing procedures, parts removal, and installation are covered in depth. A study of the computation of temperature pressure relation and related problems is included. Environmental impacts and safety are emphasized, including Environmental Protection Agency certification.

ACR 2114 INDUSTRIAL REFRIGERATION

Covers all aspects of using ammonia as a refrigerant. Describes both single-stage and two-stage ammonia systems. Explains the importance of accumulators and intercoolers in ammonia systems. Concludes with coverage of liquid recirculation system operation.

ACR 2124 SHEET METAL

Provides an introduction to safety, tools, machinery, materials, and fasteners used in the sheet metal trade.

ACR 2134 BOILER OPERATIONS

Will cover the basic theory, operation, and construction of a high pressure boiler.

ACR 2991, 2992, 2993, 2994, 2995, 2996 SPECIAL TOPICS FOR AIR CONDITIONING AND REFRIGERATION

This course is designed to introduce students to specific areas in Air Conditioning and Refrigeration. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

AMST 2003
American Studies

An exploration of American culture through study of significant ideas, social issues and literary texts.

Note: AMST 2003 may be used to fulfill 3 hours of the Social Sciences general education requirements.

ANTH 1213
Introduction to Anthropology

An introduction to the subdisciplines 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.

Note: May not be taken for credit after completion of ANTH 3213.

ANTH 2103
Human Ecology of the Mountain South

This course provides students with the knowledge and skills to understand changing human-environment relationships in the mountain South and to apply these understandings to the assessment of, and potential solutions to, contemporary socio-environmental issues in the area. We will explore the emergence of Mississippian societies, their transformation during prehistoric and early historic eras, the impacts of early European settlements and the regions' incorporation into the global marketplace, development and the growth of tourism and industry in the area, and current social and environmental issues in the mountain South.

ANTH 2203
Indians of North America

A study of contemporary and historical peoples and cultures of North America.

ANTH 2223
North American Archeology

The study of prehistoric peoples and cultures of North America.

ANTH 3241, 3242, 3243, 3244
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 3303
Southeastern Archaeology

The course will survey the rise of chiefdom-level societies in the prehistoric Southeast, reconstruct the "Mississippian world" these chiefdoms created, document the activities of sixteenth-century Spanish explorers in the region, and trace the subsequent decline of Mississippian chiefdoms. In addition to reconstructing the landscape of the ancient South, students will explore long-term social and cultural traits of southeastern Indians and discover the secrets unearthed at famous Mississippian sites such as Cahokia, Moundville, and Etowah.

ANTH 3313
Southeastern Indians

This course is an ethnographic and historic survey of southern Indians from European contact through the era of Removal. Particular emphasis will be placed on the following subjects: the decline of chiefdom societies across the South, the Spanish mission system, the development of the deerskin and Indian slave trade, native resistance to colonial encroachment, and a detailed discussion of Removal. The course also includes ethnographic descriptions of major southern Indian groups, including the Creek, Cherokee, Catawba, Choctaw, Chickasaw, Seminole, Apalachee, and Natchez. By the end of the course students should acquire an understanding of a little known aspect of our country's heritage, be able to distinguish between the various colonial strategies at play in the region, as well as the various forms of native resistance, and gain an appreciation for the place of southern Indians within U.S. society today.

ANTH 3403
Ethnographic Methods

This course trains students in research methods in anthropology with an emphasis on qualitative research. Students learn the different uses of methodologies to address specific types of research questions, practice participant-observation and interview techniques as part of semester-long research projects, and survey anthropological theory as it relates to conducting ethnographic fieldwork.

ANTH 4206
Workshop in Anthropology

Offered: 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.

Note: It may be necessary to assess a special fee which would be stated in advance.

ANTH 4403
Interpretation/Education through Museum Methods

Cross-listed: HIST 4403, MUSM 4403

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.

ANTH 4853
Music of the World's Peoples

Cross-listed: MUS 4853

Open to students in all majors. A survey of predominantly non-Western world music cultures with attention to sonic structures, musicians, musical instruments, and socio-cultural contexts of music making. Listening emphasized.

ANTH 4951, 4952, 4953, 4954
Undergraduate Research in Anthropology

Offered: On demand

Prerequisites: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

ANTH 4991, 4992, 4993, 4994
Special Problems in Anthropology

Prerequisite: Permission of instructor.

Independent work under individual guidance of staff member.

ART 1163
Basic Photography

Cross-listed: JOUR 1163

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 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. \$36 art fee.

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 1503
Introduction to Graphic Design

Prerequisite: ART 1403, ART 1303 or permission of instructor.

An introduction to fundamental graphic design principles, techniques and materials.

\$36 art fee

ART 2103
Art History I

An examination of the periods and western cultures responsible for major artistic monuments and achievements from pre history through the Gothic period.

ART 2113
Art History II

A western art 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 2213
Digital Skills for the Graphic Designer

Prerequisites: ART 1503 Introduction to the Macintosh computer system.

Students will learn graphic design software which they will, in turn, use to create various projects.

\$36 art fee

**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. \$36 art fee.

**ART 2403
Color Design**

Basic application of color principles and color theory.

Studio six hours. \$36 art fee.

**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. \$36 art fee.

**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. \$100 art fee.

**ART 3003
Concepts in Art Education**

Prerequisite: Sophomore Review.

Introduction to theory and specialized practice in art education issues as applied to elementary art experience. Studio processes, art criticism, aesthetics, and art history methodology will be incorporated into lessons implemented as part of field experience in local elementary schools.

Studio six hours. \$36 art fee.

**ART 3013
Art Education Practicum**

Prerequisite: Sophomore Review.

Curriculum design with emphasis on visual art standards, art media, and assessment as applied to teaching on the secondary level. Students will implement a unit of study in partnership with local schools.

Studio six hours. \$36 art fee.

**ART 3113
Art History, American**

Prerequisite: Sophomore Review.

A study of art forms in architecture, painting, sculpture and craft from Colonial times to the present.

**ART 3123
Art History, Renaissance**

Prerequisite: Sophomore Review.

A concentrated study of art forms in architecture, painting, sculpture and crafts during the period of the Italian and Northern Renaissance.

**ART 3203
Typography and Layout**

Prerequisites: ART 1503, ART 2213, and Sophomore Review.

Beginning and intermediate problems in layout designs as well as the effective use of type.

\$36 art fee.

**ART 3223
Three-dimensional Graphic Design**

Prerequisite: ART 1503, ART 2213, and Sophomore Review.

Studio problems in the design and presentation of 3 D advertising packaging and displays.

Studio six hours. \$36 art fee.

ART 3232
Production Techniques

Prerequisites: ART 1503 or ART 1203, ART 3203, ART 3223

Introductory course on preparing graphic design pieces for commercial printing.

\$24 art fee.

ART 3243
Web Design

Prerequisite: ART 2213, 3203, and Sophomore Review.

Introduce basic website planning, content editing and creation using graphic arts techniques. Screen-based color theory, web design aesthetics, use of graphic editors, and interface design are explored.

Studio six hours. \$36 course fee.

ART 3253
Computer Illustration

Prerequisite: ART 2213 and Sophomore Review.

This course will provide students with advanced conceptual skills in computer illustration and digital imaging. Students will acquire intermediate knowledge in vector and pixel-based drawing formats, digital painting effects, comic art/video game illustration, storyboarding and coloring through the completion of integrated design projects.

Studio six hours. \$36 course fee.

ART 3303
Drawing Studio I

Prerequisites: ART 1303, 2303, or permission of instructor and Sophomore Review.

The application of the theories and techniques of drawing as they relate to the study of composition in finished works of art.

Studio six hours. \$36 art fee.

ART 3403
Introduction to Opaque Painting

Prerequisites: Art 1303, 1403, 2403, Sophomore Review or permission of instructor.

The exploration of opaque painting techniques. Traditional oil, acrylic and alkyd will be studied.

Studio six hours. \$36 course fee.

ART 3503
Painting Studio I

Prerequisite: ART 3403 and Sophomore Review.

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. \$36 art fee.

ART 3533
Watercolor Painting

Prerequisite: ART 1303, 1403, 2403, or permission of instructor and Sophomore Review.

The exploration of transparent water painting techniques.

Studio six hours. \$36 art fee.

ART 3603
Introduction to Ceramics

Prerequisites: ART 1403 or permission of instructor and Sophomore Review.

An introduction to ceramics, emphasizing the imaginative design and production of ceramic objects utilizing hand building and wheel throwing techniques. Exposure to the complete ceramic process through the use of demonstrations, slides, and lectures.

Studio six hours. \$100 art fee.

ART 3703
Sculpture Studio I

Prerequisite: ART 2703 and Sophomore Review.

A continued study of sculptural techniques introduced in Introduction to Sculpture, allowing for student expansion and specialization on individual conceptions.

Studio six hours. \$100 art fee.

ART 3713
Sculpture Studio II

Prerequisite: ART 2703 and Sophomore Review.

A continued study of sculptural techniques introduced in Introduction to Sculpture, allowing for student expansion and specialization on individual conceptions.

Studio six hours. \$100 art fee.

ART 3803
Introduction to Printmaking

Prerequisites: ART 1303, 1403, 2403 and Sophomore Review.

A survey of traditional printmaking techniques will be taught including intaglio, relief, and monotype.

Studio six hours. \$100 art fee.

ART 3813
Printmaking Studio I

Prerequisite: ART 3803 and Sophomore Review.

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. \$100 materials fee.

ART 3903
Introduction to Fiber Arts

Prerequisites: Art 1303, 1403, 2403 and Sophomore Review.

An introduction to fiber arts to include historical and cultural connections, techniques and processes associated with materials studies such as weaving, papermaking, textile design, and mixed media.

Studio six hours. \$36 art fee.

ART 4103
Art History, Modern

Prerequisite: Sophomore Review.

The study of art and architecture from neo classicism to the present with emphasis on the art styles after Impressionism.

ART 4123
Art History, Medieval

Prerequisite: ART 2103, sophomore review or permission of instructor.

A study of the art and architecture of the European Middle Ages, from the rise of Christianity through the Gothic period.

ART 4133
Art History, Native American

This course surveys the Native American arts of North America from ancient to modern (and postmodern) times looking at various geographical regions. Course content includes the relationship between indigenous American worldview and Native artistic traditions and visual culture. The course also covers the impact of colonialism and modernization on Native American culture and how Native communities have negotiated, appropriated, and/or resisted these pressures. We will also look at the adaptation of modernism to Native American visual culture, both by Native and non-Native artists.

ART 4143
Art History, Latin American

This course surveys Latin American art from the Colonial to the Modern period, covering a wide geographic region and emphasizing certain patterns of colonialism, nationalism, modernism, and regionalism that give us a glimpse of the cultural processes at work in this vast region in the early modern Americas. The first half of the course is divided into such themes as the arts and visual culture of indigenous Americans and its interplay with European colonization, the consolidation of colonial power in viceroyalties, the work of missionaries, the metropolitan church, and the colonial aristocracy. The class then covers the development of national art in the nineteenth century, before looking at Latin American arts in the twentieth century including the interplay between modernism and regionalism.

ART 4163
Advanced Photography

Cross-listed: JOUR 4163

Prerequisite: JOUR (ART) 1163 or consent of instructor.

An introduction to advanced photographic techniques including digital photography. Various historic and current theories of visual communication provide a substantive base for the application of techniques.

ART 4231
Graphic Design Exhibition

Offered: spring

Prerequisites: ART 1503, 2213, 3203, 3223, 3232, 3243, 3253, 4623 and Sophomore Review.

Co-requisite: ART 4243

The purpose of the course is to provide the student an opportunity to present their work in a professional manner in a public venue.

ART 4233
Techniques for Illustration

Prerequisites: ART 1303, 1403, 2303, 2403 and Sophomore Review.

Application of fine art drawing and painting techniques to illustration problems.

Studio six hours. \$36 course fee.

ART 4243
Professional Portfolio Preparation for Graphic Designers

Prerequisites: Art 1503, Art 2213, Art 3203, Art 3223, Art 3233 and Sophomore

Co-requisites: ART 4231

Review. The purpose of this course is to prepare the student for entry into the professional world through the development of a resume and the presentation of their work.

\$36 course fee.

ART 4313
Drawing Studio II

Prerequisite: ART 3303 and Sophomore Review.

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. \$36 art fee.

ART 4323
Drawing Studio III

Prerequisite: ART 3303 and Sophomore Review.

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. \$36 art fee.

ART 4503
Painting Studio II

Prerequisite: ART 3503 and Sophomore Review.

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. \$36 art fee.

ART 4513
Painting Studio III

Prerequisite: ART 3503 and Sophomore Review.

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. \$36 art fee.

ART 4603
Ceramics Studio I

Prerequisites: ART 3603 and Sophomore Review.

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. \$100 art fee.

ART 4613
Ceramics Studio II

Prerequisites: ART 3603 and Sophomore Review.

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. \$100 art fee.

ART 4623
Animation Techniques

Prerequisite: ART 2213, 2303, 3203, and Sophomore Review.

Introduce basic drawing/2D animation, and create movies/cartoons, motion graphics/interactive content using multimedia tools and techniques. Time-based media, animation timing, use of audio-visual editors, and effective storyboard techniques are explored.

Studio six hours. \$36 course fee.

**ART 4701
Special Methods in Art**

Prerequisites: Sophomore Review, 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**

Offered: Spring

Prerequisite: Junior Review, Sophomore Review.

This course is required for all Fine Arts majors, and elective for Graphic Design and Art Education majors.

**ART 4723
Art History Seminar**

Prerequisite: Sophomore review, senior standing, or permission of instructor.

This course will provide a forum for in-depth examination of a particular artist, movement, theme, or period in art history.

**ART 4733, 4736
Graphic Design Internship**

Prerequisites: Art 1503, 2213, 3203, 3233, Sophomore Review, Junior Review and instructor's permission.

A supervised, practical experience providing graphic design majors with professional hands-on training in a position relating to an area within their chosen field of graphic design at a cooperating business.

**ART 4803
Printmaking Studio II**

Prerequisite: ART 3813, Sophomore Review and permission of Instructor.

A concentration on printmaking techniques which will develop additional strength and capability in the student.

Studio six hours. \$100 art fee.

**ART 4813
Printmaking Studio III**

Prerequisite: ART 3813, Sophomore Review and permission of Instructor.

A concentration on printmaking techniques which will develop additional strength and capability in the student.

Studio six hours. \$100 art fee.

**ART 4823
Art Criticism and Aesthetics**

Prerequisites: Sophomore Review, Art 2103 and/or 2113.

Perspectives on analyzing and interpreting works of art required for art education majors. The course may be used as an art history elective for graphics and fine arts majors.

**ART 4951, 4952, 4953, 4954
Undergraduate Research in Art**

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

**ART 4991, 4992, 4993, 4994
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.

Fee may apply.

**AST 1004
GASOLINE ENGINE THEORY**

Provides the student with an introduction to automotive engines. Students learn the proper use and care of hand tools, precision tools, special tools, and equipment. Theory of operation with attention to components is included. Cooling systems, lubrication systems, intake systems, exhaust systems, vehicle maintenance, as well as PC based automotive schematics and flow charts are taught. Safety is emphasized.

**AST 1005
ENGINE PERFORMANCE**

Provides students with an understanding of fuel, ignition, drivability, and emissions systems. Theory of operation as well as relevant electronic components and computing systems diagnosis is included.

AST 1103 AUTOMOTIVE BRAKE SYSTEMS

Concentrates on the theory and operation of disc and drum brake systems. Basic hydraulic principles as well as the operation and components of the brake foundation systems are taught. The course includes an in-depth study of various power brake systems, including vacuum assisted systems, hydraulically boosted systems, and several types of anti-lock braking systems.

AST 1113 INTRODUCTION TO AUTOMOTIVE DRIVETRAINS

Designed to cover the entire drivetrain on a late model vehicle with a standard transmission. Instruction will begin with the flywheel and proceed to the transmission, through the differential assembly, and ending at the wheel and hub. Includes the principles of gear reduction as it applies to the theory, operation, and repair of manual transmission, differential, and transaxles. Several types of four-wheel drive systems will be taught.

AST 1203 AUTOMOTIVE CLIMATE CONTROL

Begins with a study of refrigeration, the refrigeration cycle, and basic components of a typical automotive refrigeration system. The function and construction of compressors, lines, expansion valves, expansion tubes, condensers, evaporators, blower motors, and air distribution systems is covered. Automatic temperature control systems including the latest computer monitored systems, and heating and ventilation will also be covered. Service and maintenance procedures as well as shop safety are emphasized.

AST 1213 AUTOMOTIVE CHASSIS AND STEERING

Designed to introduce the student to the theory and operation of modern suspension and steering systems. The study of the suspension system includes wheels, tires, hubs, bearings, seals, springs, and vehicle forms. Various designs and construction of each of these components will be covered. Steering and suspension systems start with the basic theory of steering geometry and the related factors. Wheel alignment, construction and operation of the various manual, and power steering components is included.

AST 1223 ADVANCED AUTOMOTIVE DRIVETRAINS

Pre-requisite: AST 1113. A continuation of AST 1113. A study of the theory and operation of the entire drivetrain of automotive automatic transmissions and transaxles.

AST 2103 ADVANCED AUTOMOTIVE ELECTRONICS

Prerequisites: AST 1105 and ELT 1222. This course applies the fundamentals of electronics, including Ohm's Law, basic electrical circuits, wiring diagrams, and common electrical symbols to the automobile. Diagnosis and troubleshooting of electrical circuits is emphasized, including familiarizations with most common types of testing equipment. It includes an in-depth study of the theory and operation of automobile electronic control systems.

AST 2113 ADVANCED ENGINE PERFORMANCE

Prerequisites: AST 1105, AST 1206, and ELT 1222. This course covers advanced theory and testing of engine related fuel and computerized systems. The student should have a basic understanding of basic computer, fuel, and ignition systems. Students will use more advanced equipment for testing.

AST 2203 DIESEL THEORY

Studies the basic principles involved in the construction and operation of diesel engines. Examines fuel, air, cooling, and control systems of various designs. Discusses engine overhaul and repair, includes gauging proper measuring instruments and tools for these tasks. Studies the design, operation, care, and repair of fuel injection systems used on a variety of diesel engines. Emphasizes care and cleanliness in troubleshooting the fuel preheating, starting, generating, and lighting systems. Lecture: 2 hours, laboratory: 1 hour.

AST 2991, 2992, 2994, 2995, 2996 SPECIAL TOPICS FOR AUTOMOTIVE SERVICE TECHNOLOGY

This course is designed to introduce students to specific areas in Automotive Service Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

AST 2993 SPECIAL TOPICS FOR AUTOMOTIVE SERVICE TECHNOLOGY

This course is designed to introduce students to specific areas in Automotive Service Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once. This course requires 15 clock hours per one semester credit hour.

BIOL 1004 Principles of Environmental Science

Cross-listed: PHSC 1004

Offered: On demand

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. \$20 laboratory fee.

BIOL 1011 **Orientation to the Biological Sciences**

This course orients entering students to the biological sciences. Topics examined in this course include an overview of the Tech Department of Biological Sciences and careers in biology, managing a biology curriculum (registration procedures, student responsibilities, and study skills), requirements for professional schools and graduate education, and undergraduate research opportunities.

BIOL 1014 **Introduction to Biological Science**

An introduction to the major concepts of biological science, with an emphasis on the development of this scientific perspective and how it applies to humans.

Note: Duplicate credit for BIOL 1014 and BIOL 1114 will not be allowed. May not be taken for credit after completion of BIOL 1114, 2124, or 2134.

Lecture three hours. Laboratory two hours. \$10 laboratory fee.

BIOL 1114 **Principles of Biology**

Prerequisites: scores of 19 or higher on the reading, science reasoning and mathematics portions of the enhanced ACT or completion of MATH 0903 with a grade of C or higher, or a grade of C or higher in a science course.

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.

Note: Duplicate credit for BIOL 1014 and BIOL 1114 will not be allowed.

Lecture three hours, laboratory two hours. \$10 laboratory fee.

BIOL 2004 **Basic Human Anatomy and Physiology**

Prerequisite: A grade of C or higher in a science course or approval of the instructor.

This course is intended for students who have a need for basic studies in functional aspects of the organ systems of the human body.

Note: This course may not be taken for credit after completion of BIOL 2014, 3074, or equivalent.

Lecture three hours, laboratory two hours. \$10 laboratory fee.

BIOL 2014 **Human Anatomy**

Prerequisite: A grade of C or higher in a science course or approval of the instructor.

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 2022 **Medical Laboratory Orientation and Instrumentation, Laboratory**

Offered: Fall

Prerequisites: A grade of "C" or higher in BIOL 1114 or BIOL 2124. Enrollment is limited to students enrolled 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 2023 **Medical Laboratory Orientation and Instrumentation**

Offered: Fall

Prerequisites: Enrollment is limited to medical assistant and/or medical technology majors who have completed at least BIOL 1114 or BIOL 2124 (AHS 2013 recommended) with a grade of "C" or higher 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, hemostatic processes, body chemistry, microbiology, and blood typing.

BIOL 2111 **Environmental Seminar**

Cross-listed: CHEM 2111, GEOL 2111

Offered: Spring

A seminar for students pursuing the environmental option of biology, chemistry, or geology and other students interested in environmental sciences.

BIOL 2124 **Principles of Zoology**

Prerequisites: Scores of 19 or higher on the reading and science reasoning portions of the enhanced ACT; or BIOL 1014 or BIOL 1114; or approval of the instructor.

A survey of the major animal phyla: morphology, physiology, and natural history.

Lecture three hours, laboratory two hours. \$10 laboratory fee.

BIOL 2134 Principles of Botany

Prerequisites: Scores of 19 or higher on the reading and science reasoning portions of the enhanced ACT; or BIOL 1014 or BIOL 1114; or approval of the instructor.

Introduction to the structure, function, classification, and importance of nonvascular and vascular plants.

Lecture three hours, laboratory two hours. \$10 laboratory fee.

BIOL 2144 Honors Zoology

Prerequisite: Admission to the Tech Honors Program or permission of the instructor.

An honors course which includes a survey of the major animal phyla: morphology, physiology, and natural history. The presentation will foster rational inquiry, critical thinking, and analytical skills in general and specifically toward discussions of evolution and associated implications for world views.

Note: Duplicate credit for BIOL 2124 and 2144 will not be allowed.

Lecture 3 hours, lab 2 hours.

BIOL 2881, 2882, 2883, 2884 Special Topics in Biology

Offered: On demand

Prerequisite: Consent of the instructor.

This course offers specialized instruction in an area of biological sciences that is not otherwise covered in the curriculum. The focus of the course will vary from offering to offering, thus the course may be taken more than once.

Note: BIOL 2884 includes a \$10 lab fee.

BIOL 3004 Plant Taxonomy

Offered: Spring

Prerequisites: BIOL 1114 and 2134 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. \$20 laboratory fee.

BIOL 3014 Comparative Anatomy

Offered: On demand

Prerequisite: BIOL 2124.

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 3024 Embryology

Offered: On demand

Prerequisite: BIOL 2124.

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

Prerequisites: BIOL 1114 (or equivalent) with a grade of "B" or higher, MATH 1113 (or higher) and two semesters of chemistry.

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

Offered: On demand

Prerequisites: BIOL/CHEM/GEOL 2111.

A study of natural resources, their utilization in a technical society, and factors leading to their depletion.

BIOL 3054 Microbiology

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

Offered: On demand

Prerequisite: BIOL 2124

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

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 3084 Ichthyology

Cross-listed: FW 3084

Offered: Fall

Prerequisite: BIOL 2124

Systematics, collection, identification, natural history, and importance of fishes.

Lecture two hours, laboratory four hours. \$20 laboratory fee.

BIOL 3104 Introduction to Entomology

Cross-listed: AGPM 3104

This course will introduce the student to insect diversity and the identification of the major families of insects. Laboratory time will be spent learning family characteristics and collecting and preserving insect specimens. Lecture will consist of topics such as insect diversity, morphology and physiology.

\$25 course fees

BIOL 3111 Environmental Seminar

Cross-listed: CHEM 3111, GEOL 3111

Offered: Spring

A seminar for students pursuing the environmental option of biology, chemistry, or geology and other students interested in environmental sciences.

BIOL 3114 Principles of Ecology

Cross-listed: FW 3114

Prerequisites: BIOL 2124, 2134, 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. \$20 laboratory fee.

BIOL 3124 General Physiology

Offered: Fall

Prerequisites: BIOL 1114, 2124, 2134, and two semesters of chemistry.

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

Offered: Spring

Prerequisites: BIOL 1114, 2124, 2134, and two semesters of chemistry.

Morphology, physiology, natural history and taxonomy of major invertebrate phyla. Laboratory maintenance and preservation techniques.

Lecture two hours, laboratory four hours. \$20 laboratory fee.

BIOL 3144
Ornithology

Cross-listed: FW 3144

Offered: Spring

Prerequisite: BIOL 2124

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.

Note: Students will be expected to participate in an extended 5-7 day field trip.

Lecture two hours, laboratory four hours. \$20 laboratory fee.

BIOL 3154
Mammalogy

Cross-listed: FW 3154

Offered: Fall

Prerequisite: BIOL 2124

Taxonomy, identification, ecology, and study natural history of the mammals.

Lecture three hours, laboratory two hours. \$20 laboratory fee.

BIOL 3174
Physiological Ecology

Prerequisites: BIOL 1114, 2124, 2134 and two semesters of chemistry.

An in-depth study of plant and animal adaptations and responses to different environmental conditions. Comparative physiology of major systems, mechanisms of adaptation and adaptations to challenging habitats will be studied.

\$10 laboratory fee.

BIOL 3184
Animal Behavior

Cross-listed: PSY 3184

Offered: Spring of even years

Prerequisites: sophomore standing in biology or psychology, or approval of instructor.

An introductory course in animal behavior covering behavioral responses in primitive and advanced animals exposed to a wide range of environmental and social conditions. Laboratory exercises will include field as well as in-lab exercises and will focus on observational techniques and analyses of behavioral patterns in vertebrates and invertebrates.

Lecture three hours, laboratory two hours. \$20 laboratory fee.

BIOL 3213
Science Education in the Elementary School

Cross-listed: PHSC 3213

Prerequisites: Junior standing, ECED 2001, ECED 2002, and at least six credit hours in science.

An overview of the most recent and research-based strategies and techniques for planning, teaching, and assessing elementary science. Inquiry-based methods and other constructivist approaches as described in the National Science Education Standards will be emphasized. Design and execution of learning activities for an elementary school setting are required.

Note: To enroll in an internet section (TC1 or AT1) of this course, one of these prerequisite courses is required: COMS 1003, EDMD 3013, or equivalent.

Lecture two hours, laboratory two hours; three credit hours. \$10 laboratory fee.

BIOL 3223
Science Education in the Middle Level

Cross-listed: PHSC 3223

Offered: Spring

Prerequisites: 16 hours in science and MLED 2001.

This course is designed to provide pre-service teachers with an integrated approach to the teaching of science in the middle grades. Theoretical and practical aspects of teaching science will be explored and students will develop curricular materials based on their explorations.

Lecture two hours, laboratory 2 hours. \$10 laboratory fee.

BIOL 3224 Herpetology

Cross-listed: FW 3224

Offered: Spring of odd years

Prerequisite: BIOL 2124

The phylogeny, classification, physiology, behavior, and distribution of reptiles and amphibians. The Laboratory will stress identification of the species found in Arkansas.

Lecture two hours, laboratory four hours. \$20 laboratory fee.

BIOL 3233 Science Education in the Secondary School

Cross-listed: PHSC 3233

Offered: Fall

Prerequisites: 16 hours in biology or 16 hours in physical science and SEED 2002.

This course will examine the issues of nature and history of science, developing lessons and assessments, and science education standards for the prospective secondary school teacher. Curriculum development, including assessment and planning skills, utilizing various instructional media and inquiry methodology are emphasized. Design and execution of learning activities for a secondary school setting are required.

Lecture two hours and lab two hours. \$10 laboratory fee.

BIOL 3252 The Nature and Context of Science

Cross-listed: PHSC 3252

Offered: On demand

Prerequisite: At least 12 hours of science courses.

This seminar course examines science from a holistic perspective. It will concentrate on examining how current science develops scientific knowledge including unifying concepts across scientific disciplines, the place of science within modern society, technology and its role in science and society, and current scientific methodology.

BIOL 3803 Applied Pathophysiology

Cross-listed: NUR 3803

Prerequisites: grade of C or better in 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.

BIOL 4003 History and Philosophy of Science

Cross-listed: PHSC 4003

Offered: On demand

Prerequisite: a Sophomore-level science course (or higher).

A course in the historical development and philosophical basis of modern science.

Note: BIOL (PHSC) 5003 may not be taken for credit after completion of this course.

BIOL 4014 Endocrinology

Offered: Spring of odd years

Prerequisites: BIOL 1114, 2124 and one semester of chemistry.

An in-depth study of the endocrine systems of animals with emphasis on vertebrates. Histology and embryology of endocrine organs or cell groups, mechanisms of stimulation, response, and actions plus comparative aspects of similar organs in different animal groups will be studied.

Lecture 3 hours, laboratory two hours. \$10 laboratory fee.

BIOL 4023 Immunology

Offered: 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.

BIOL 4024 **Limnology**

Cross-listed: FW 4024

Offered: 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. \$20 laboratory fee.

BIOL 4033 **Cell Biology**

Offered: Fall

Prerequisites: BIOL 1114, 2124 or 2134 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.

BIOL 4044 **Dendrology**

Offered: Fall

Prerequisites: BIOL 1114 and 2134.

A study of woody plants with emphasis on field recognition throughout the year.

Lecture two hours, laboratory four hours. \$20 laboratory fee.

BIOL 4054 **Vertebrate Histology**

Offered: Spring of even years

Prerequisites: BIOL 1114, 2124 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**

Offered: Spring of even years

Prerequisites: 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 4074 **Molecular Genetics**

Offered: Spring of odd years

Prerequisite: BIOL 3034

This course continues the material introduced in Genetics (BIOL 3034) with a focus upon the major concepts and techniques in contemporary molecular genetics. Current viewpoints of the gene, gene regulation, developmental genetics, recombinant DNA technology, genomics, proteomics, and molecular evolution are among the topics examined in the course.

Lecture 3 hours, laboratory 3 hours. \$10 laboratory fee.

BIOL 4083 **Cancer Biology**

Prerequisite: BIOL 3034

An in-depth study of major areas and topics in cancer biology, including etiology and epidemiology of cancer, impact of the human genome mapping project, molecular genetics and cell biology of cancer, cancer modeling and clinical aspects of human cancer.

BIOL 4094 **Coastal Ecology**

Offered: May Mini-Term

Prerequisites: BIOL 2124 and BIOL 2134 and one semester of chemistry.

A focused study of coastal ecology, as represented by the Mississippi Gulf Coast. Coastal plants, animals, their interactions, and relationship to the physical environment are explored.

Note: The course includes a required field trip to the Gulf Coast. Investigations are conducted in the marshes, bays, estuaries, bogs, and barrier island systems. Students bear the cost of food and a nominal housing fee.

\$20 laboratory fee.

BIOL 4111 Environmental Seminar

Cross-listed: CHEM 4111, GEOL 4111

Offered: Spring

A seminar for students pursuing the environmental option of biology, chemistry, or geology and other students interested in environmental sciences.

BIOL 4112 Biology Internship

Prerequisites: Junior or senior standing and consent of internship program director.

A supervised, practical experience providing BIOL majors with a hands-on, professional experience related to their career interests. The course will allow students to gain experience in an occupational environment. Students will be placed in positions under the direction of the internship program director and work supervisor. The program will emphasize application of classroom knowledge to career goals. Approximately 200 clock hours, a proposal, a log book or journal, a summary letter from the employment supervisor, and a written report are required.

Note: A maximum of four credit hours is allowed for BIOL internship.

BIOL 4114 Biology Internship

Prerequisites: Junior or senior standing and consent of internship program director.

A supervised, practical experience providing BIOL majors with a hands-on, professional experience related to their career interests. The course will allow students to gain experience in an occupational environment. Students will be placed in positions under the direction of the internship program director and work supervisor. The program will emphasize application of classroom knowledge to career goals. Approximately 400 clock hours, a proposal, a log book or journal, a summary letter from the employment supervisor, and a written report are required.

Note: A maximum of four credit hours is allowed for BIOL internship.

BIOL 4163 Biodiversity and Conservation Biology

Cross-listed: FW 4163

Offered: Fall of even years

Prerequisite: A course in ecology 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.

BIOL 4701 Special Methods in Biology

Prerequisite: Admission to student teaching phase of the teacher education program.

Co-requisite: 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 4881, 4882, 4883, 4884 Advanced Topics in Biology

Offered: On demand

Prerequisites: an upper level science course and consent of the instructor.

This course offers advanced instruction in an area of biological sciences that is not otherwise covered in the curriculum. The focus of the course will vary from offering to offering, thus the course may be taken more than once.

Offered on demand. \$10 laboratory fee.

BIOL 4891 Seminar in Biology

Prerequisite: An upper level biology course and senior standing.

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 4951, 4952, 4953, 4954

Undergraduate Research in Biology

Offered: On demand

Prerequisites: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

BUS 0903 KEYBOARDING

Acquaints the student with the alphabetic keyboard through usage of the computer. The course emphasizes basic skill development through drills for speed and control, methods used in centering and tabulations, letter style, business reports, and production measurement. (May be required if student's skill level is not adequate for other course work.)

BUS 1003 BUSINESS ENGLISH

Designed to develop the student's vocabulary skills, dictionary usage, proofreading, listening, and English grammar as needed for current business usage enabling the student to write and communicate effectively.

BUS 1013 WORD PROCESSING I

Students will learn word processing skills in storing, retrieving, formatting, editing, and printing through the manipulation of the software program. Must possess adequate computer literacy skills before enrolling.

BUS 1023 BUSINESS MATHEMATICS

A comprehensive study of mathematics as applied to business. Banking, payroll, business statistics, and other selected topics will be covered.

BUS 1033 ADMINISTRATIVE SUPPORT PROCEDURES

Prerequisite: BUS 0903 or permission of instructor. Emphasizes the practices and procedures acceptable in a business office. Topics include interpersonal relations, telephone usage, mail handling, records management, job application procedures, travel arrangements, reprographics, and financial statements.

BUS 1043 PROFESSIONAL COMMUNICATION

Designed to review and/or learn the basics in punctuation and to further develop spelling skills. The course covers the principles of effective communication in the modern business office. Topics include writing skills, reading skills, and psychological principles involved in effective business letter writing as well as oral communication.

BUS 1053 SPREADSHEETS

Students will develop comprehensive skills using Microsoft Excel. These skills will include toolbar usage, cell and worksheet formatting, cell functions, worksheet organization and printing. The user will become adept at advanced features such as charts, linking worksheets and workbooks, customizing templates and toolbars, and other features.

BUS 1063 LEGAL ENVIRONMENT FOR BUSINESS TECHNOLOGY

Provides an introduction to characteristics of the American system of free enterprise and the obligations and rights of an individual. Topics include torts, rights of private property, contracts, bailment, insurance and risk, labor, and dignity and worth of an individual.

BUS 1073 ACCOUNTING

The study of fundamental accounting concepts and procedures. The course emphasizes the accounting cycle, and includes journalizing and posting transactions, preparing trial balances, worksheets, and financial statements. Emphasis is also given to cash, banking, payroll procedures, sales, purchases, and accounts receivable/payable.

BUS 1083 INTRODUCTION TO ECONOMICS

An overview of macroeconomics with continued emphasis on microeconomic theory as it applies to business technology students

BUS 1303 INTRODUCTION TO COMPUTERS

Designed to introduce students to computer hardware, software, procedures, systems, and human resources as applied to business. It focuses on computer literacy, the concepts of the data processing cycle, and an introduction to commercially available software.

BUS 2113 WORD PROCESSING II

Pre-requisite: BUS 1013. Provides students an opportunity for more in-depth practical application of word processing skills. Emphasis is given to design, format, merging, and advanced editing techniques.

BUS 2123 COMPUTER APPLICATIONS FOR ACCOUNTING

Prerequisite: BUS 1073. Designed to acquaint students with major areas of computerized accounting. Application areas covered will include general ledger, accounts payable, accounts receivable, and payroll.

BUS 2133 MULTIMEDIA

Focuses on a variety of software as well as technology-based equipment used in advanced office settings. Projects will emphasize the use of the following: digital camera, video equipment, desktop publishing, graphics production, electronic slide show presentations, E-mail, and Internet.

BUS 2143 INTRODUCTION TO MANAGEMENT

Provides insight into the characteristics, organization, and operation of a business. Studies include international business, factors of business operations, and business decision-making. Management skills, the legal environment, and types of business ownership are included in this course.

BUS 2153 DATABASE MANAGEMENT

This course includes elementary database design, record layouts, simple selection operations, and basic report generation.

BUS 2163 DESKTOP PUBLISHING

Prerequisites: COMS 1003 or BUS 1303 and/or BUS 1013. Utilizes a desktop publishing software program in order to provide practical experience in the development of marketing and informative correspondence. Activities include creating newsletters, menus, posters, fact sheets, advertisements, business reports, brochures, comprehensive indexes, and planning a web page.

BUS 2303 MONEY AND BANKING

Addresses the various financial markets as well as economic factors and their impact on the banking industry.

BUS 2313 DEPOSIT OPERATIONS

Covers customer services, teller functions, new accounts, accounts payable, trusts, estates, branch security, general ledger banking, e-banking and online banking, call support, confidentiality, and research in banking.

BUS 2333 LOAN OPERATIONS

All aspects of consumer and commercial lending as well as financial and insurance statements. Other topics that will be addressed include managing loan files, assessing risk in lending, understanding issues of regulation and compliance, bankruptcy, credit reports, and appraisals.

BUS 2991, 2992, 2993, 2994, 2995, 2996 SPECIAL TOPICS FOR BUSINESS TECHNOLOGY

This course is designed to introduce students to specific areas in Business Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

CHEM 1111 Survey of Chemistry Laboratory

Co-requisite: CHEM 1113.

An introduction to laboratory experiences in chemistry.

\$10 laboratory fee

CHEM 1113 A Survey of Chemistry

Prerequisite: A score of 19 or above on the mathematics section of the ACTE exam, or completion of MATH 0903, Intermediate Algebra, with a grade of C or better.

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. May not be taken for credit after completion of CHEM 2124 or 2134.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

CHEM 2111 Environmental Seminar

Cross-listed: BIOL 2111, GEOL 2111

(See CHEM 4111).

CHEM 2124 General Chemistry I

Prerequisites: Score of 21 or higher on the math portion of the ACTE; or MATH 1113 or equivalent; or a "C" or better in CHEM 1114; or approval of the instructor.

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

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 2201, 3301
Chemistry Seminar

(See CHEM 4401).

CHEM 2204
Organic Physiological Chemistry

Offered: Spring

Prerequisites: CHEM 1114 or CHEM 2124.

For students who desire only one semester of organic/physiologic chemistry, such as wildlife biology and various allied health programs. A brief introduction to organic and physiological chemistry. The structures, reactions and biological aspects of organic compounds will be stressed.

Note: Will not be counted for chemistry credit toward the ACS approved BS in chemistry.

Lecture three hours, laboratory three hours. \$10 lab fee.

CHEM 2991, 2992, 2993, 3991, 3992, 3993
Special Problems in Chemistry

Prerequisite: 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 mentor.

CHEM 3111
Environmental Seminar

Cross-listed: BIOL 3111, GEOL 3111

(See CHEM 4111).

CHEM 3245
Quantitative Analysis

Offered: Spring

Prerequisite: CHEM 2134

This is a lab intensive course, that focuses on a variety of experimental techniques that enable 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

Prerequisite: CHEM 2134

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

Offered: Spring

Prerequisite: Completion of CHEM 3254 or equivalent.

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 3313
Environmental Chemistry

Offered: Spring

Prerequisite: Chemistry 3254

An examination of the chemistry of the environment including the origins, natural processes, and anthropogenic influences.

CHEM 3324

Physical Chemistry I

Offered: 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

Offered: Spring

Prerequisite: CHEM 3324.

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 3344 Principles of Biochemistry

Prerequisites: CHEM 3264 and BIOL 1014 or 1114

The chemistry of metabolism of carbohydrates, lipids, and proteins. Basic concepts of the biochemistry of DNA, vitamins, enzymes, biological oxidations, and bioenergetics with introduction to biochemical laboratory techniques.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

CHEM 3353 Fundamentals of Toxicology

Offered: On 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

Prerequisite: 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.

CHEM 3423 Descriptive Inorganic Chemistry

Prerequisite: CHEM 2134

Basic descriptive inorganic chemistry dealing in a systematic way with the elements and the structures, properties and reactions of their inorganic compounds. Topics range from coordination chemistry to organometallic chemistry to bioinorganic chemistry.

CHEM 4111 Environmental Seminar

Cross-listed: BIOL 4111, GEOL 4111

Offered: 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

Offered: 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

Offered: 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 electrochemical techniques will be covered in the lecture and laboratory.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

CHEM 4422
Advanced Organic Chemistry

Offered: On demand

Prerequisite: CHEM 3264

An expansion and/or continuation of theoretical topics addressed in CHEM 3264.

CHEM 4424
Advanced Inorganic Chemistry

Offered Spring

Prerequisite: CHEM 3423

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, 4433, 4434
Advanced Topics in Chemistry

Offered: On demand

Prerequisite: Permission of instructor.

Various advanced topics in any specialty area of chemistry, e.g., polymers, coordination chemistry, and nuclear chemistry.

CHEM 4951, 4952, 4953, 4954
Undergraduate Research in Chemistry

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

CHEM 4991, 4992, 4993, 4994
Special Problems in Chemistry

Prerequisite: 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 mentor.

CIS 1103
PROGRAMMING I

This course is designed to give the student an understanding of established and new methodologies using Microsoft Visual Basic programming. Course content will include an overview of programming, designing an application and using variables and constants. Emphasis will be placed on developing logical thinking skills. No prior programming skill is necessary.

CIS 1113
FUNDAMENTAL COMPUTER OPERATION

Students will learn to manage current Microsoft Operating Systems. Topics included are troubleshooting and applying basic commands that are necessary in a working environment. Students will also explore basic Network and Web Design concepts. No prior computer experience is necessary.

CIS 1153
NETWORKING I

Designed as a foundation course that provides the theory and basic understanding of the hardware and software that comes together to build local area networks.

CIS 1203
PROGRAMMING II

A continuation of Programming I. This course introduces the programming power of Microsoft Visual Basic 6.0.

CIS 1213
OPERATING SYSTEMS

Pre-requisite: CIS 1113. Expands on the foundation that was built in Operating Systems I. Topics will include file management, multitasking, graphics, peer-to-peer networking, and accessories. Specific tasks of networking such as E-mail and scheduler will be covered.

CIS 1233
SYSTEMS ANALYSIS AND DESIGN

This course is an introduction to basic concepts regarding the system life cycle, analytical tools and methods, file and record layouts, and elements of the design phase.

CIS 1243
HTML PROGRAMMING

Pre-requisite: CIS 1103. This class provides training in coding simple to complex web pages using HTML code. Common programming practices as well as distinct

HTML skills are taught. Repetition, variable usage, and decision structures are covered, as well as some basic Javascript routines.

CIS 1253 NETWORKING II

Pre-requisite: CIS 1153. Builds upon the skills and concepts learned in Networking I. Emphasis will be on the hands-on aspects of personal computer networks using Microsoft and Linux based networking products, including installations and/or expanding a networking system and troubleshooting problems.

CIS 1303 PC MAINTENANCE I

This course is designed to prepare individuals to troubleshoot, build, and repair personal computers, workstations, printers, and other computer peripherals. The student will also learn to install, debug, diagnose, and repair software problems associated with PCs.

CIS 2133 WEB PAGE DESIGN

This course introduces the student to design and development of web pages. HTML, images, multimedia, and other topics will be covered so that students learn how to publish and maintain a web site to a server.

CIS 2143 HELP DESK SUPPORT

This course is designed to teach individuals to troubleshoot the Microsoft Office Application Suite. It focuses on customer service and communication with the end user.

CIS 2153 PROGRAMMING IN C++

This course is designed to teach individuals to use the Microsoft Visual Basic for applications. It focuses on macro creation and integration of a programming language into a business application suite.

CIS 2303 PC MAINTENANCE II

Pre-requisite: ICS/CIS 1303.

This course is designed to teach individuals core elements of computer repair based on the A+ Certification exams. The student will build on the knowledge acquired from PC Maintenance I, allowing them to be more prepared to diagnose, and repair computers in the working environment.

CIS 2991 SPECIAL TOPICS FOR COMPUTER INFORMATION SYSTEMS

This course is designed to introduce students to specific areas in Computer Information Systems. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

CIS 2992, 2993, 2994, 2995, 2996 SPECIAL TOPICS FOR COMPUTER INFORMATION SYSTEMS

This course is designed to introduce students to specific areas in Computer Information Systems. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

CNA 1114 BASIC NURSING PRINCIPLES AND SKILLS I

This course covers the fundamental principles, skills, and attitudes needed to give nursing care and prevent the spread of disease. Procedures used in the care of the sick and the ability to adapt them to various situations are discussed. Students will learn to document their observations and interventions.

COMS 1003 Introduction to Computer Based Systems

Provides students with both computer concepts and hands-on applications. Although little or no prior computer experience is required for this course, keyboarding proficiency is assumed. Topics include PC basics, file maintenance, and hardware and software components. Students will gain experience in the use of Windows, e-mail, the Internet, word processing, spreadsheets, databases, and presentation packages. The integration of software packages will also be covered.

Note: This course may not be taken for credit after completion of COMS 2003 or BUAD 2003.

Note: Credit by examination is offered to students who have notable experience with computers and MS Office applications. Information regarding this examination can be found at cs.atu.edu/coms1003.

COMS 1103 FORTRAN Programming

Prerequisites: 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 1203 Programming in BASIC

An introduction to programming using BASIC and/or Visual Basic.

COMS 1303 Computer Applications for Technical Majors

Co-requisite: 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**

Prerequisites: COMS 1003 or BUAD 2003

This course focuses on how to develop web pages for display on the World Wide Web. Topics covered include markup languages, style sheets, links, images, multimedia, tables, forms, design issues, and other topics as appropriate. Students will learn how to publish a web site to a server and maintain the site.

COMS 1403 **Orientation to Computing, Information, and Technology**

Co-requisite: MATH 1113 and COMS 1411

(Required of all students who have declared a major in computer science, information systems, and information technology). An introduction to the professions of computer science, information systems, and information technology. Topics include ethics, professionalism, and opportunities within the three fields as well as an overview of hardware, software, technology, and information systems concepts and terms.

COMS 1411 **Computer and Information Science Lab**

Co-requisite: COMS 1403

An introduction to the computing resources of the department and the university.

COMS 2003 **Microcomputer Applications**

Prerequisites: COMS 1003 or BUAD 2003

This course provides hands-on experience with several software applications. Topics include intermediate and advanced word processing and desktop publishing features; spreadsheet design, formulas, and charts; database design principles and implementation; presentation design and techniques; and integration among these applications. Students will be required to apply each package on a semester project related to their major.

COMS 2104 **Foundations of Computer Programming I**

Prerequisites: MATH 1113, and either COMS 1403 and 1411 or consent of instructor.

An introduction to structured programming using C++. This is the beginning programming course for students majoring in computer science, information systems, and information technology. Programming principles covered in lecture are practiced in lab. Major topics include sequential, selection, and iterative control structures, functions, parameter passing, and file processing. Arrays are introduced as a structured data type.

COMS 2163 **Scripting Languages**

Prerequisite: Minimum of 3 hour programming course.

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**

Prerequisites: MATH 1113 and completion of COMS 2104 with a grade equal to or greater than a C.

Topics include multi-dimensional arrays, functions, string processing, classes, and records. Students are introduced to object-oriented programming using C++.

COMS 2213 **Data Structures**

Prerequisites: COMS 2203, and COMS 2903

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 and ELEG 2134

Introduction to organizing and structuring hardware components of computers. Topics include internal data representation, data transfer and control, I/O, memory hierarchy, and programming in assembly.

COMS 2233 **Introduction to Databases**

Prerequisite: COMS 1003 or 1403

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

Prerequisites: COMS 1333 or consent of instructor.

This course is a continuation of COMS 1333. Students are introduced to multimedia design concepts and software. Multimedia applications and design tools are used to create and maintain multimedia products such as dynamic graphics, animation, interactive websites, and video.

COMS 2700 Networking and Architecture Laboratory

Co-requisite: COMS 2703

Laboratory exercises repairing and networking computers.

COMS 2703 Computer Networks and Architecture

Prerequisites: COMS 1411 and COMS 1403

Co-requisite: COMS 2700

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. Participation in a designated lab outside of the regularly scheduled meeting time is required.

COMS 2713 Survey of Operating Systems

Prerequisites: COMS 1411; COMS 1003 or COMS 1403

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 2733 Introduction to Computer Forensics and Security

Prerequisite: COMS 2703

Co-requisite: COMS 2713

An introduction to the fundamentals of computer forensic technology. The course emphasizes techniques for identifying and minimizing the threats to, and vulnerabilities of computer systems. These techniques include methods and tools for tracking suspicious activity, for recovering and preserving digital media, and for doing post-mortem analysis.

COMS 2803 Programming in C

Corequisite: MATH 1113

Not for majors. This course involves the design, coding, debugging, and implementation of programs using the C language. The UNIX operating system is introduced.

Note: May not be taken for credit after the successful completion of COMS 2104.

COMS 2853 Business Application Programming using COBOL

Prerequisites: COMS 2203

This course involves the analysis, design, development, testing, implementation, and maintenance of business application programs using the COBOL language. Topics include traditional data file organization, access, and processing methodologies. Additional topics include data validation, tables, sorting, searching, screen I/O, and report-based output. Programs are developed in PC and IBM mid-range computing environments.

COMS 2903 Discrete Structures for Technical Majors

Prerequisite: MATH 1113

Fundamental mathematical concepts related to computer science, information systems, and information technology, including logic and proof techniques; sets, sequences, relations, and functions; combinatorics; algebraic structures and Boolean algebra; trees and graphs.

COMS 2981, 2982, 2983, 2984 Special Topics

Prerequisite: Permission of the department.

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 3053 Implications of Technology on Society

Prerequisite: Junior standing

This course explores social, legal, philosophical, political, economic, and constitutional issues related to information technology. The focus will be on those issues faced as members of a complex technological society and as professionals in a technology-related field. Extensive research on current issues is expected.

COMS 3163
Web Programming

Prerequisite: COMS 2163

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

Prerequisite: COMS 2213 and 3913

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

Prerequisites: COMS 2333 and 3163

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

Prerequisites: 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 3513
Administering and Using the IBM Platform

Prerequisites: COMS 2104 or consent of instructor.

This course is an introduction to the operations of the IBM midrange computer system. Topics include architecture, system security, user interface, and work management. Coverage will also extend to applications and programming using an introduction to DB2 and RPG.

COMS 3523
Human Factors in Information Technology

Prerequisites: Junior standing in a computing major or instructor consent.

A study of the major factors involved in Human-Computer Interaction. A system-oriented, multi-disciplinary approach to understanding the human considerations in the design, testing, implementation, and administration of computer-based systems and information technology.

COMS 3603
Principles of Management Science

Prerequisites: BUAD 2053 and junior standing.

An introduction to management science analytical techniques, including such topics as the simplex method of linear programming, dual problem and sensitivity analysis, and integer programming. Emphasis is placed on the application of these methods using case studies and examples from the area of finance, marketing, and production. Applicable management science software will be used.

COMS 3703
Operating Systems

Prerequisites: 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 3903
Systems Software and Architecture

Prerequisites: COMS 2703 and junior standing.

This course covers the implementation of production operating systems, the fundamentals of digital logic, and machine architecture.

Note: This course does not count as credit toward a degree in Computer Science.

COMS 3913
Advanced Discrete Structures

Prerequisites: COMS 2203, COMS 2903

Advanced topics in discrete mathematics applicable to modeling, analysis, and computer theory. Topics include relations, graphs, analysis of algorithms, and

computability.

COMS 4013
Quality Management in Information Technology

Prerequisites: BUAD 2053 and COMS 4203

The study of quality management and quality assurance with regard to the analysis, design, development, and implementation of information systems and information technology. Topics include measurement techniques and standards, including ISO 9001 and other associated best practices regarding process management and process improvement.

COMS 4033
Systems Analysis and Design I

Prerequisite: COMS 4203

The application of 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

Prerequisites: COMS 4033 and either COMS 4133, 4163, or 4313

A continuation of COMS 4033, with emphasis on the application of the theory and techniques covered in the previous course. Students will research, analyze, design, implement, test and document a complete system. Students will complete and present their final system project as a team.

COMS 4053
Information Systems Resource Management

Prerequisites: Junior standing in information systems, information technology, or computer science.

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 services and information systems. Additional topics include legal, ethical, and professional issues, quality management, and the strategic impact of information systems.

COMS 4063
IT Project Administration

Prerequisite: Junior standing in information technology, information systems, or computer science.

This course provides a thorough introduction to the art and science of Project Management, as applied in the domain of information technology. Theories, best practices, and tools of project management are studied in relation to the completion of a successful project life cycle.

COMS 4103
Organization of Programming Languages

Prerequisites: COMS 2213, COMS 2223, and COMS 3913

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 4133
Application Program Development

Prerequisites: COMS 2213 and COMS 2853

Object-oriented application development. Topics include OO Programming, three-tier design, and model-driven development. The course involves a major individual programming project. Students will develop and present their own large-scale application program.

COMS 4163
Personal Software Engineering

Prerequisite: COMS 3213

Formal methods for software specification. Program analysis, verification, and testing. Principles of software design. Object-oriented program implementation. Personal software process and product measurements. Program documentation. Software tools. Each student will implement a large application.

COMS 4203
Database Concepts

Prerequisites: COMS 2003, COMS 2203 and COMS 2903

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 4213
Database Administration

Prerequisite: COMS 4203

This course develops a comprehensive foundation in the planning, implementation and execution of database management policies and procedures. Topics include installation, storage and replication implementation, security management, indexing and performance tuning, and backup and recovery.

COMS 4253
Computer Graphics

Prerequisites: COMS 2213 and MATH 4003

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

Prerequisites: COMS 2213 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 4313
Web Server Administration

Prerequisites: COMS 2333 and COMS 2733

The tools and techniques needed to administer a web server. Installation, configuration, and administration of a variety of web servers on different platforms.

COMS 4353
Artificial Intelligence

Prerequisites: 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

Prerequisites: COMS 2223, 3213 and 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

Prerequisites: COMS 2213 and either COMS 3703 or COMS 3903

This course is intended to give the student practical experience in the implementation, modification, and maintenance of system software.

COMS 4700
Data Communications and Networking Lab

Co-requisite: COMS 4703

Students will complete network lab exercises in support of COMS 4703.

COMS 4703
Data Communications and Networks

Prerequisites: COMS 2703, COMS 2903; COMS 2223 or COMS 3903.

Co-requisite: COMS 4700

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. Participation in a designated lab outside of the regularly scheduled meeting time is required.

COMS 4710
Heterogeneous Networks Lab

Co-requisite: COMS 4713

Students will complete network lab exercises in support of COMS 4713.

COMS 4713
Heterogeneous Networks

Prerequisite: COMS 4703

Co-requisite: COMS 4710

The student will design, develop, implement and manage numerous heterogeneous networking operating system environments. Required policies and procedures are examined and developed. Networking tools required for the development of a seamless heterogeneous networking environment are studied and applied.

COMS 4803
System Simulation

Prerequisite: COMS 2213 and 3 hours of Statistics.

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 4951, 4952, 4953, 4954
Undergraduate Research in Computer and Information Science

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

COMS 4981, 4982, 4983
Seminar in Computer and Information Science

Prerequisite: Permission of department

A directed seminar in an area of computer and information science. Seminars will focus on topics relating to emerging technologies which are beyond the scope of other computer and information science courses. This course may be repeated for credit if course content differs.

COMS 4991, 4992, 4993, 4994
Special Problems in Computer and Information Science

Prerequisite: Permission of department

This course will allow the student to work individually or as part of a small team to study and design practical computerized systems in order to solve problems of particular interest. This course may be used to offer a variety of subjects that strengthen the student's knowledge in areas not covered by other course offerings.

COS 1101
HYGIENE AND SANITATION I

This course provides you with the necessary information to master the National Industry skill Standard for entry level Cosmetologist. Students will conduct services in a safe environment and take measures to prevent the spread of infectious and contagious disease. Students will safely use a variety of salon products while providing client safety.

COS 1110
HAIRDRESSING I WITH LAB

A basic study of the properties of the hair and scalp. Basic hair care, shampooing, rinsing, conditioning, braiding, the care and styling of wigs and hair enhancements, wet styling, thermal straightening (hair pressing), and the principles of hair design with labs.

COS 1121
RELATED SCIENCE I

A study of cell growth, metabolism, tissues, organs, skeletal and muscular systems, basics of electricity, and basics of chemistry.

COS 1131
MANICURING I

A study of skin and nails, which includes manicuring, pedicuring, and massage.

COS 1141
COSMETIC THERAPY I

A study of histology of the skin, hair removal, skin care facial, electrotherapy and light therapy, facial makeup, and eyebrow arching.

COS 1151
SALESMANSHIP, SHOP MANAGEMENT, AND SHOP DEPARTMENT I

A study of the principles of selling and practice of applying knowledge to give the client full service through management and shop department.

COS 1201
HYGIENE AND SANITATION II

Prerequisite: COS 1101. A continuation of COS 1101, This course provides you with the necessary information to master this National Industry skill Standard for entry level Cosmetologist. Students will conduct services in a safe environment and taking measures to prevent the spread of infectious and contagious disease. Students will safely use a variety of salon products while providing client safety.

COS 1210
HAIRDRESSING II WITH LAB

Pre-requisite: COS 1110. A continuation of COS 1110, this course is a basic study of the properties of the hair and scalp. Basic hair care, shampooing, rinsing, conditioning, braiding, the care and styling of wigs and hair enhancements, wet styling, thermal straightening (hair pressing), and the principles of hair design with labs.

COS 1221
RELATED SCIENCE II

Pre-requisite: COS 1121. A continuation of COS 1121, a study of cell growth, metabolism, tissues, organs, skeletal and muscular systems, basics of electricity, and basics of chemistry.

COS 1231
MANICURING II

Pre-requisite: COS 1131. A continuation of COS 1131, a study of skin and nails, which includes manicuring, pedicuring, and massage.

COS 1241
COSMETIC THERAPY II

Pre-requisite: COS 1141. A continuation of COS 1141, a study of histology of the skin, hair removal, skin care facial, electrotherapy and light therapy, facial makeup, and eyebrow arching.

COS 1251 SALESMANSHIP, SHOP MANAGEMENT, AND SHOP DEPARTMENT II

Pre-requisite: COS 1151. A continuation of COS 1151, a study of the principles of selling and practice of applying knowledge to give the client full service through management and shop department.

COS 2301 HYGIENE AND SANITATION III

Prerequisites: COS 1101 and COS 1201. A continuation of COS 1201, This course provides you with the necessary information to master this National Industry skill Standard for entry level Cosmetologist. Students will conduct services in a safe environment and taking measures to prevent the spread of infectious and contagious disease. Students will safely use a variety of salon products while providing client safety.

COS 2310 HAIRDRESSING III WITH LAB

Pre-requisites: COS 1110 and COS 1210. A continuation of COS 1210, this course is a basic study of the properties of the hair and scalp. Basic hair care, shampooing, rinsing, conditioning, braiding, the care and styling of wigs and hair enhancements, wet styling, thermal straightening (hair pressing), and the principles of hair design with labs.

COS 2321 RELATED SCIENCE III

Pre-requisites: COS 1121 and COS 1221. A continuation of COS 1221, a study of cell growth, metabolism, tissues, organs, skeletal and muscular systems, basics of electricity, and basics of chemistry.

COS 2331 MANICURING III

Pre-requisites: COS 1131 and COS 1231. A continuation of COS 1231, a study of skin and nails, which includes manicuring, pedicuring, and massage.

COS 2341 COSMETIC THERAPY III

Pre-requisites: COS 1141 and COS 1241. A continuation of COS 1241, a study of histology of the skin, hair removal, skin care facial, electrotherapy and light therapy, facial makeup, and eyebrow arching.

COS 2351 SALESMANSHIP, SHOP MANAGEMENT, AND SHOP DEPARTMENT III

Pre-requisites: COS 1151 and COS 1251. A continuation of COS 1251, a study of the principles of selling and practice of applying knowledge to give the client full service through management and shop department.

COS 2405 THEORY AND PRACTICAL APPLICATION

A course covering all faces of Cosmetology. Theory and practical applications are stressed.

COS 2991, 2992, 2993, 2994, 2995, 2996 SPECIAL TOPICS FOR COS

This course is designed to introduce students to specific areas in Cosmetology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

CRT 1103 AUTOMOTIVE WELDING

Students will receive instruction on how to properly weld and cut on automobiles with the use of mig welders and plasma cutters.

CRT 1114 METAL REPAIR I

The straightening, alignment, and fitting of major panels are taught. Procedures necessary to weld, heat, cut, and shape are taught. Emphasis in this course is on theory and practical application.

CRT 1124 PAINTING I

This course includes skills and technical knowledge in the preparation of metal for paint; chemical stripping of old finishes; use and maintenance of spray painting equipment; mixing and spraying of all types of automotive finishes; and identification of common materials used.

CRT 1134 COLOR MATCHING I

A continuation of painting with emphasis on spraying techniques and tinting of paints to achieve color match.

CRT 1214 METAL REPAIR II

Prerequisite: CRT 1114.

A continuation of CRT 1114 with advanced straightening techniques with the application of body fillers being taught.

**CRT 1224
PAINTING II**

Prerequisite: CRT 1124.

A continuation of CRT 1124. This course includes skills and technical knowledge in the preparation and application of automotive finishes.

**CRT 1234
COLOR MATCHING II**

Prerequisite: CRT 1134.

A continuation of CRT 1134. Develop advanced color match techniques.

**CRT 1312
AIR BRUSHING**

The student will learn spraying techniques using multiple colors, metal flake paints, and multilayer masking using special spraying techniques and air brushes.

**CRT 1322
DETAILING**

Students will receive instruction on how to properly clean and buff all visible exterior and interior surfaces of a vehicle.

**CRT 1332
COST ANALYSIS/COLLISION REPAIR**

Students will receive instruction in the preparation of an estimate, calculating the cost of parts, materials, and labor required to repair a collision damaged vehicle.

**CRT 2991, 2992, 2993, 2994, 2996
SPECIAL TOPICS FOR COLLISION REPAIR TECHNOLOGY**

This course is designed to introduce students to specific areas in Collision Repair Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

**CRT 2995
SPECIAL TOPICS FOR COLLISION REPAIR TECHNOLOGY**

This course is designed to introduce students to specific areas in Collision Repair Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

**ECON 2003
Principles of Economics I**

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**

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.

**ECON 2103
Honors Principles of Economics I**

Prerequisites: Admission to University Honors or permission of Honors Director.

Macroeconomic analysis of output, income, employment, price level, and business fluctuations, including the monetary system, fiscal and monetary economics, and international economics.

**ECON 3003
Money and Banking**

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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**

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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**

Prerequisites: ECON 2003 and 2013, MATH 2243 or 2914, and junior standing. Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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 3093 Econometrics

Prerequisites: BUAD 2053, PSY 2053 or MATH 2163 or consent of instructor. Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

This course develops the theory and applications of regression analysis, which is the primary tool for empirical work in economics. Emphasis is placed on techniques for estimating economic relationships, economic modeling, inference, and testing economic hypotheses in the context of real world problems. Students will also be exposed to other empirical techniques to prepare them for further studies.

ECON 4001, 4002, 4003 Readings in Economic Theory

Offered: On demand

Prerequisites: Senior standing, background of courses needed for problem undertaken and permission of the department head. Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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

Offered: Fall

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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

Offered: On demand

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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

Prerequisites: Additional prerequisites for 3000 and 4000 level courses are listed in the College of Business section of this catalog.

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.

EMTP 1001 First Aid and CPR for Health Care Providers

Student in this course will learn to recognize and provide first aid for injuries ranging from simple lacerations to musculoskeletal injuries. Students will also learn how to recognize various medical emergencies ranging from heart attacks to allergic reactions. Students will complete requirements for certification in first aid, adult, child and infant CPR including Automated External Defibrillator (AED). This course is recognized by health care agencies, fire departments, police departments and local industries. (Cost of certification will be assessed.)

EMTP 1003 MEDICAL FIRST RESPONDER

This course is designed to train students to perform in pre-hospital care of acutely ill or injured patients. Medical First Responders perform such measures as cardiopulmonary resuscitation, extrication, initial patient assessment and triage, and stabilization of any emergency.

EMTP 1007 BASIC EMERGENCY MEDICAL SERVICES TRAINING

This course is designed to train students to perform in pre-hospital care of acutely ill or injured patients. EMTs perform such measures as cardiopulmonary resuscitation, extrication, initial patient assessment and triage, stabilization and transport of any emergency, to include routine transport of non-emergent patient to allied health care facility.

EMTP 1103 LIFE SPAN DEVELOPMENT

Designed to prepare the student for the psychological development of infancy to geriatrics. The course of study will emphasize normal and abnormal physiological changes in people, both during their growth and development.

EMTP 1107 INTERMEDIATE EMERGENCY MEDICAL SERVICES TRAINING

This course is designed to train students to perform in pre-hospital care of acutely ill or injured patients. EMTs perform such measures as cardiopulmonary resuscitation, IV access, extrication, initial patient assessment and triage, stabilization and transport of any emergency, to include routine transport of non-emergent patient to allied health care facility.

EMTP 1113 PHARMACOLOGY I

Includes the pharmacological developments, standards, and patient rights and drug controls. The student will apply their knowledge of human anatomy and physiology, and ethics with the pharmacological use of medications, pharmacokinetics, fluids, and electrolytes. Clinical pharmacology will be emphasized.

EMTP 1133 ANATOMY AND PHYSIOLOGY

This course is the basic study of human anatomy and physiology. Students will study body systems and functions of human organisms. Students will learn basic biological chemistry and have an understanding of all systems and how homeostasis in human bodies is achieved.

EMTP 1213 PREHOSPITAL ENVIRONMENT

The role of the advanced prehospital provider in the EMS system is emphasized along with the legal responsibilities and liabilities within the EMS environment. This course includes the utilization of medical direction and protocols, ethics, and the well being of EMS personnel with an emphasis on illness and injury prevention. Rescue, stress management, and mass casualty response will be included in this course. Hazardous materials as well as violent situations will be covered with an emphasis on personal and bystander safety. The patient assessment portion will include history taking, interview skills, and the physical exam. EMT level assessment techniques will be readdressed in addition to the introduction of paramedic level skills/techniques.

EMTP 1223 CLINICAL PRACTICUM I

The student will receive supervised/ preceptor clinical experience in the emergency department, respiratory therapy, and operating room. Students will perform patient procedures under the guidance of a professional health care preceptor with expertise in the patient care area. Students will observe care of critical and non-critical patients. Students will be required to assess and document on specific age and diverse complaint based patients while in the clinical area. Students will earn a team approach in the clinical area while performing basic and advanced patient skills check-off in Lab I.

EMTP 1231 LAB I

Review and successfully perform EMT Basic skills. Advanced skill demonstration and proficient performance evaluations that will prepare the student for practical use in clinical and field internship. Advanced airway, intravenous therapy, intramuscular injections, and IV medication administration. Emphasis on patient rights in the area of health care.

EMTP 1303 CARDIOLOGY

This course is designed to train students to understand the pathophysiology, assessment and management of cardiac patients to include pharmacological and electrical interventions. The pharmacology section will focus on the study, preparation, administration, and indications of cardiac medications. Students will gain knowledge of EKG (ECG) monitoring of leads I, II, and III with an emphasis on the study of arrhythmia etiologies and irregular waveforms. The American Heart Association (AHA) Advanced Cardiac Life Support (ACLS) will be administered during this course. ACLS is designed to offer health care professionals a high-density course of advanced cardiac knowledge and treatment. Critical thinking skills will be examined through case based scenarios as well as a written test. In addition to the regular coursework, students must successfully complete ACLS practical (Pass/Fail) and written exam (84%) to successfully complete Cardiology. (Certification costs will be assessed.)

EMTP 1304 MEDICAL EMERGENCIES I

This course will present the student with the pathophysiology, clinical assessment and treatment of patients presenting with specific illness. Pulmonology, neurology, endocrinology, allergies, anaphylaxis, gastroenterology, urology, nephrology, toxicology, substance abuse, hematology, environmental emergencies, and infectious disease will be included in this section with an emphasis on assessment based management of present illness and focused patient complaints for effective field treatment.

EMTP 1305 CLINICAL PRACTICUM II

The student will apply basic and advanced assessment and procedures in the emergency department, Intensive Care Unit, and Operating Room while under supervision of preceptor and/or clinical coordinator. The student will have specific age and patient conditions to evaluate and assist in management of care in the ER department.

EMTP 1331 LAB II

Will be re-evaluated in basic skills learned in Lab I. Students will learn the application of EKG monitors, pacing, synchronized cardioversion, pacing and the practical use of pulmonary oximeters. Students will apply the knowledge of advanced patient assessment to clinical scenarios.

EMTP 1401 LAB III

Will demonstrate all skills learned in Labs I and II. Students will learn pediatric skills such as airway management, invasive therapy, and advanced trauma skills. Students will also demonstrate competency in advanced cardiac life support, pediatric life support, and pre-hospital trauma life.

EMTP 1403 MEDICAL EMERGENCIES II

This course is designed to train students to understand the pathophysiology, assessment and management of infectious disease, abuse or assault, geriatrics, pediatrics, neonatology, and OB/GYN. Emphasis will be placed on assessment based management of present illness and focused patient complaints. The American Heart Association (AHA) Pediatric Advanced Life Support (PALS) program will be presented during this course. PALS is designed to provide health care professionals a greater knowledge of emergency care for the pediatric patient. Airway management, specialized procedures and pharmacological techniques will be addressed. The

PALS program stresses critical thinking skills and the student will be examined through case based scenarios as well as a written test. In addition to the regular coursework, students must successfully complete the PALS practical exam (Pass/Fail) and written exam (84%) for successful completion of Medical Emergencies II. (Certification costs will be assessed.)

EMTP 1413 CLINICAL PRACTICUM III

Designated preceptors and/or clinical coordinator in the following areas will supervise students: Intensive Care Unit, Surgical Recovery, and Operating Room, and Labor & Delivery. Students will apply knowledge of course information learned and perform procedures that are appropriate for these areas of hospital. Students will have patient condition and age specific criteria to evaluate in this session that is mandatory to course completion.

EMTP 1423 TRAUMA MANAGEMENT

This course is intended to present the student with a comprehensive insight into traumatic injury. Pathophysiology, assessment, and management of trauma to include blunt, penetrating, soft-tissue, burn, musculoskeletal, head, face, neck, spinal, thoracic, and abdominal trauma as well as hemorrhage and shock will be analyzed. Types and phases of shock will be explored to provide the student assessment knowledge for the treatment of various shock conditions. Epidemiology of trauma will be discussed as well as the Arkansas Trauma System. The course will culminate with the National Association of Emergency Technicians (NAEMT) Prehospital Trauma Life Support (PHTLS). PHTLS is designed to refine the student's trauma knowledge and critical thinking skills through lecture, practical applications, and case based management scenarios. The student will also receive insight into special circumstances and alternative treatment methods for trauma victims. (Certification costs will be assessed.)

EMTP 1424 PARAMEDIC INTERNSHIP I

Preceptors in the field will supervise patient assessment and management skills during the student's pre-hospital rotation. Students will have a greater understanding of EMS systems and dispatching or emergencies with a higher level of competency in patient report transmission to the ED's and patient report documentation. Students must successfully complete ACLS, the program's skill and critical thinking competency, to be scheduled for an interview with the program medical director prior to scheduling their internship rotation.

EMTP 1504 PARAMEDIC INTERNSHIP II

Continuation of Internship I with evaluation by designated preceptors in the pre-hospital environment. Students must achieve a level of understanding, professionalism and clinical knowledge of pre-hospital emergency care to be recommended by the medical director and program director to enter this phase of the paramedic program. Students must perform patient assessment and management skills while under supervision of experienced preceptors including the ability to perform as a team leader in the pre-hospital setting during this phase of the program. A closer evaluation of student's character and professionalism will be emphasized. This course will be the student's final step in pre-hospital field evaluation.

EMTP 1512 ASSESSMENT BASED MANAGEMENT

The student will learn the final aspects of pre-hospital care and management in this session of the paramedic program. The student will learn effective scene and patient management, critical thinking and clinical decision-making. This session will serve as a final analysis of the student's ability to analyze patient information and provide the treatment necessary for the best outcome of the patient's condition. The student must have an understanding of all tasks required of the paramedic provider in the pre-hospital setting prior to the final exit of the paramedic program.

EMTP 2991 SPECIAL TOPICS FOR PARAMEDICS/EMERGENCY SERVICES

This course is designed to introduce students to specific areas in Paramedic/Emergency Medical Services. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

EMTP 2992, 2993, 2994, 2995, 2996 SPECIAL TOPICS FOR PARAMEDICS/EMERGENCY MEDICAL SERVICES

This course is designed to introduce students to specific areas in Paramedic/Emergency Medical Services. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

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.

Note: 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 composition sequence.

Note: 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

Prerequisites: Score of 19 or above on English section of the Enhanced ACT, 460 or above on the quantitative portion of the SAT, 40 or above on the TSWE, 75 or above on the COMPASS writing section, 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.

Note: May not be taken for credit after successful completion of ENGL 1043.

ENGL 1023 Composition II

Prerequisites: Minimum grade of C in ENGL 1013 or 1043.

A continuation of ENGL 1013 with readings in poetry, fiction, and drama.

Note: 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.

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 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.

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.

Note: 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.

Note: ENGL 2013 may be used to fulfill the general education humanities requirement.

ENGL 2023 Honors World Literature

Prerequisites: Successful completion of ENGL 1013 or 1043 and admission to the Tech Honors Program, or permission of the Honors Program Director.

An honors course that explores significant authors and themes in world literature.

Note: ENGL 2023 may be used to fulfill the general education humanities requirement.

ENGL 2043 Introduction to Creative Writing

Prerequisite: ENGL 1023 or equivalent

Introduction to techniques of writing both fiction and poetry.

ENGL 2053 Technical Writing

Prerequisite: ENGL 1023 or equivalent

Practice in composing abstracts, instructions, visuals, proposals, questionnaires, letters, memos, and a variety of informal and formal reports.

ENGL 2063 Advanced Composition: Practice and Theory

Prerequisite: ENGL 1023 or equivalent

Practice with several types of expository writing. An introduction to research techniques and composition theory.

ENGL 2173 Introduction to Film

Cross-listed: Jour 2173

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.

Note: ENGL 2173 may be used to fulfill the General Education fine arts requirement.

Note: ENGL 2173 may not be repeated for credit after the completion of JOUR 2173.

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 2233
Introduction to Fiction

Prerequisite: ENGL 1013 or equivalent

A study of form, terminology, and specific works of fiction.

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 2881
Practicum-Literary Journal Publication

Prerequisite: ENGL 1013 or equivalent

Students will work as staff members of NEBO: A Literary Journal.

Note: 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 1023 or equivalent

Students are recommended to complete ENGL 3023 before enrolling in this course. A synthesis of the most useful elements of traditional, transformational, and structural grammar.

ENGL 3023
Introduction to Linguistics

Cross-listed: FR 3023, GER 3023, SPAN 3023, SPH 3023

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
Literary Editing and Publishing

Prerequisite: ENGL 1023

A study of literary editing and publishing in print and online.

ENGL 3083
Fiction Workshop

Prerequisite: ENGL 2043.

Concentration in the writing and evaluation of fiction.

Note: May be repeated once for credit as ENGL 3083.

ENGL 3093
Poetry Workshop

Prerequisite: ENGL 2043

Concentration in the writing and evaluation of poetry.

Note: May be repeated once for credit as ENGL 3093.

ENGL 3103
Literary Theory

Prerequisite: ENGL 1023 or equivalent

A study of contemporary critical approaches to literature.

ENGL 3173
Studies in Film

Prerequisite: ENGL 1023 or equivalent

A focused study of selected films. Course content will vary.

Note: May be repeated for credit as ENGL 3173 if course content differs.

ENGL 3203
Modern Novel

Prerequisite: ENGL 1023 or equivalent

Reading in representative novels written since 1900.

ENGL 3223
Young Adult Literature

Prerequisite: ENGL 1023 or equivalent

A survey of young adult literature.

ENGL 3243
Early Novel

Prerequisite: ENGL 1023 or equivalent

Reading in representative novels written before 1900.

ENGL 3293
Studies in Literature and Language

Prerequisite: ENGL 1023 or equivalent

A focused study of selected literary works or selected language topics. Course content will vary.

Note: May be repeated for credit as ENGL 3293 if course content differs.

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 British authors.

ENGL 3453
Chaucer

Prerequisite: ENGL 1023 or equivalent

A study of representative works.

ENGL 3463
Shakespeare

Prerequisite: ENGL 1023 or equivalent

A study of selected comedies, histories, and tragedies.

ENGL 3513
Methods of Research

Prerequisite: ENGL 2063, equivalent, or consent.

A study of techniques for research.

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 1023, 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.

Note: May be repeated for credit as ENGL 4053 if course content differs.

ENGL 4083
Seminar: English Language

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: May be repeated for credit as ENGL 4083 or ENGL 5083 if course content differs.

ENGL 4093
Seminar in Creative Writing

Prerequisite: ENGL 2043

Course content will vary.

Note: May be repeated for credit as ENGL 4093 if course content varies.

ENGL 4173
Seminar in Film Studies

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: May be repeated for credit as ENGL 4173 or ENGL 5173 if course content differs.

ENGL 4213
American Folklore

Prerequisite: ENGL 1023 or equivalent

A study of the forms and subjects of American folklore, folklore scholarship and bibliography; field work in collecting folklore.

Note: May not be repeated for credit as ENGL 5213.

ENGL 4283
Seminar: World Literature

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: May be repeated for credit as ENGL 4283 or ENGL 5283 if course content differs.

ENGL 4383
Seminar: American Literature

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: May be repeated for credit as ENGL 4383 or ENGL 5383 if course content differs.

ENGL 4483
Seminar: British Literature

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: May be repeated for credit as ENGL 4483 or ENGL 5483 if course content differs.

ENGL 4683
Seminar In Gender Studies

Prerequisite: ENGL 1023 or equivalent

Course content will vary.

Note: 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 1023, 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 1023, 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 1023, 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 4813
Senior Project in Creative Writing

Prerequisites: Completion or concurrent enrollment in ENGL 3083 and ENGL 3093.

Completion of a significant creative writing project approved by the instructor.

ENGL 4881, 4882, 4883, 4884
Practicum-Editing Literary Journal

Prerequisites: 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.

Note: May be repeated for a maximum of six semester hours. Cumulative hours in ENGL 2881 and ENGL 4881-4 may not exceed nine.

ENGL 4951, 4952, 4953, 4954
Undergraduate Research in English

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

ENGL 4991, 4992, 4993, 4994
Special Problems in English

Prerequisites: English major or minor and consent of instructor and department head.

Course content and credit are designed to meet the needs of the student.

**FAC 2102
ELECTRICAL APPLICATIONS**

This class prepares individuals to apply technical knowledge and skills to install and repair residential electrical systems.

**FAC 2104
CONSTRUCTION FUNDAMENTALS**

This class prepares individuals to apply technical knowledge and skills in the building, inspecting, and maintaining of structures and related properties.

**FAC 2202
CARPENTRY**

Students will learn basic carpentry skills, power and hand tool safety, the proper use of power and hand tools, framing, trim, and hanging doors and windows. Also covered will be dry wall basics, painting, and basic masonry. Some cabinet making and architectural blueprint reading will be discussed.

**FAC 2203
FACILITIES ANALYSIS AND TROUBLESHOOTING**

Students will analyze configuration of facility structures such as roof pitches and metal beam structure support ratings using geometric figures. Students will also troubleshoot structural design flaws, facilities fixture design calculations, and load calculations of the facility units.

**FAC 2212
PLUMBING**

Basic plumbing skills will be taught and will include: fixture repair and replacement; piping (water and gas piping); piping drops, angles, and sizes; and basic plumbing codes for commercial and residential facilities.

**FAC 2222
GROUNDS MAINTENANCE**

Landscape management, chemical usage and storage, MSDS file care, ADA compliance, and safety and reliability topics will be covered.

**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 2023
Human Geography**

A systematic treatment of the major concepts of human geography and their application to modern problems. consideration of population, cultural patterns and processes, political organization of space, agricultural and rural land use, industrialization and economic development, and cities and urban land use.

**GEOG 2833
Introduction to 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 3033
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 3803
Historical Geography**

Prerequisite: GEOG 2013

A study of how space and place is transformed through time. Through a focus on the geographies of the past throughout North America, this course examines the ways humans interact with the environment to create a material-cultural landscape.

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.

Note: May not be repeated for credit as GEOG 5023 or equivalent.

GEOG 4203
Place and Collective Memory

Prerequisite: GEOG 2013

An examination of the way society remembers the past and portrays this collective memory through socially constructed monuments.

GEOG 4803
Seminar in Global Studies

A seminar on current world geographic influences that affect the nations of the world, such as demographics, complex environmental and physical changes, and political and economic relationships.

GEOG 4951, 4952, 4953, 4954
Undergraduate Research in Geography

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

GEOG 4993
Special Problems in Geography

Admission requires consent of department head.

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. This course is designed as a general education science requirement and for prospective early childhood and middle level school teachers.

Note: Duplicate credit for GEOL 1004 and GEOL 1014 will not be allowed.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

GEOL 1014
Physical Geology

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.

Note: Duplicate credit for GEOL 1014 and GEOL 1004 will not be allowed.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

GEOL 2001, 3001, 4001
Seminar

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 2024
Historical Geology

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. \$20 laboratory fee.

GEOL 2111
Environmental Seminar

Cross-listed: BIOL 2111, CHEM 2111

A seminar for students pursuing the environmental option of geology, biology, or chemistry and other students interested in environmental sciences.

GEOL 3004
Structural Geology

Prerequisites: GEOL 1014, 2024, and MATH 1203 or 1914

A study and analysis of the structural features of the earth's crust.

Lecture three hours, laboratory two hours. \$20 laboratory fee.

GEOL 3014
Mineralogy

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. \$20 laboratory fee.

GEOL 3023
Geologic Field Techniques

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. \$20 laboratory fee.

GEOL 3044
Geomorphology

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 fluvial processes.

Lecture three hours, laboratory three hours. \$20 laboratory fee.

GEOL 3053
Geology of Energy and Metallic Resources

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.

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.

GEOL 3111
Environmental Seminar

Cross-listed: BIOL 3111, CHEM 3111

A seminar for students pursuing the environmental option of geology, biology, or chemistry and other students interested in environmental sciences.

GEOL 3124
Invertebrate Paleontology

Prerequisite: GEOL 2024

A systematic study of invertebrate fossils and their geologic significance.

Lecture laboratory six hours. \$20 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.

GEOL 3164
Petrology

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. \$20 laboratory fee.

GEOL 3174

Computer Applications in Geology

Participants will focus on mastering common geotechnical, oil and gas, and Geographic Information Systems (GIS) software utilized throughout the geologic profession. Course will include techniques on GIS analysis; generating stratigraphic sections, cross-sections, structure contours, fence diagrams, rose diagrams, and other geologic documents; geologic data management.

\$20 course fee.

GEOL 4006 Field Geology

Offered: Each summer by arrangement

Prerequisites: GEOL 1014, 2024, 3004, 3014, 3023, 3124, and 3164

A six week summer 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 geological field work, recognition and interpretation of geologic phenomena, and potentially in environmental evaluation. The course is offered through arrangements with various universities. Students have the option of picking the field camp that best meets their interest from a list of pre-approved camps.

Note: Field camp expenses will vary, but the average cost for room/board and tuition is \$3,000.

\$10 laboratory fee.

GEOL 4013 Optical Mineralogy

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

Prerequisites: GEOL 3124 and 3164

A study of sedimentary rocks and their stratigraphic relationships.

GEOL 4034 Subsurface Geology

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 4111 Environmental Seminar

Cross-listed: BIOL 4111, CHEM 4111

A seminar for students pursuing the environmental option of geology, biology, or chemistry and other students interested in environmental sciences.

GEOL 4951, 4952, 4953, 4954 Undergraduate Research in Geology

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

GEOL 4991, 4992 Special Problems in Geology

Open to geology majors with the approval of the department head.

HIST 1503 World Civilization I

The history of humanity from prehistoric times to the sixteenth century.

HIST 1513 World Civilization II

The history of humanity from the sixteenth century to the present.

HIST 1543 Honors World Civilizations I

Prerequisite: Admission to University Honors or permission of Honors Director.

The history of humanity from prehistoric times to the sixteenth century with an emphasis on the critical analysis of primary source documents and the methods by which

historians and other scholars interpret historical evidence.

HIST 1903
Survey of American History

Survey of American History. An overview of American history from the pre-colonial period to the present.

Note: May not be taken for credit after completion of HIST 2003 or 2013.

HIST 2003
United States History I

The study of the development of the American nation to the Civil War and Reconstruction Era.

HIST 2013
United States History II

The study of the development of the American nation since the Civil War and Reconstruction Era.

HIST 2043
Honors U.S. History I

Prerequisite: Admission to University Honors or permission of Honors Director.

History 2043 concentrates on 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 up America, Jacksonian Democracy, westward expansion, the emergence of sectionalism, and the Civil War.

HIST 2153
Introduction to Arkansas History

An introductory course on the history of Arkansas. Lectures, discussions, and applied activities will be central to this course.

Note: This course is a professional education requirement for Early Childhood and Middle Level Education majors, and may not be counted toward the History and Political Science nor the History and Political Science Education degree.

Note: Students may not take this course after completion of HIST 4153.

HIST 2203
Introduction to Public History

An introduction to the theory and disciplines of public history, including museum studies, historic preservation, archive and manuscript management, and historical editing. The course also explores the current theoretical and practical issues confronting public historians.

HIST 2513
Sources and Methods in History

This course is designed as an introduction to the field of historical research. This course introduces techniques and methods of historical research, basic historiography, bibliographical aids, and the study and writing of history. It is a hands-on course where students will use the skills learned to evaluate social science research

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 Early American Republic

The social, cultural, economic, and political climate in which Jeffersonian Jacksonian democracy developed.

HIST 3043
Civil War and Reconstruction

Prerequisite: HIST 2003 or permission of department head.

The social, political, economic, and intellectual backgrounds of the war; the military operations; analysis of Reconstruction.

HIST 3063
The Gilded Age/Progressive Era, 1877-1914

Explores the major issues associated with Gilded Age America (immigration, industrialization, urbanization, imperialism, rise of organized labor) and examines the origins, goals, and legacies of the Populist and Progressive reform movements.

Note: May not be taken for credit after completion of HIST 3053.

HIST 3073
The United States: 1914-1945

Examines the American entry and contribution in World War One; 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; and 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.

Note: May not be taken for credit after completion of HIST 4003.

HIST 3103
The Old South

Prerequisite: HIST 2003 or permission of department head.

A survey of the political, social, and economic development of the American South before the Civil War.

HIST 3123
The New South

Prerequisite: HIST 2013 or permission of department head.

A survey of the political, social, and economic development of the American South from the end of the Civil War to the present.

HIST 3223
Local and Oral History

The course has two main, inter-related themes, local history and oral history. This course examines the nature and practice of local history and explores the various methods and approaches central to local history research. In addition, this course introduces students to the literature and theory of oral history and trains them in related fieldwork methodologies.

HIST 3243
Archive and Manuscript Management

Prerequisite: HIST 2203 or permission of department head.

An introduction to the administration of archival and manuscript collections in various types of institutions. This course explores the basic theoretical principles and archival practices of appraisal, acquisition, accessioning, arrangement, description, preservation, and user services. Topics will include: records management programs, collecting archives programs, legal and ethical issues, public programming and advocacy, and the impact of the new information technologies for preservation and access.

HIST 3281
Grant Writing for Historians

Prerequisite: HIST 2203 or permission of department head.

An introductory course designed to provide students with the basic tools necessary to successfully compete for external grant funds. The focus of the course is public history grants, although the skills and knowledge presented will also benefit historians who propose professional development proposals on research and study plans.

HIST 3283
Historical Editing

Prerequisite: HIST 2203 or permission of department head.

An introduction to historical editing in both print and electronic applications. Students will gain practical experience by editing documents and surveying the relevant literature.

HIST 3291
Practicum in Public History

Prerequisite: HIST 2203

Practicum facilitating the integration, synthesis, and application of theories, concepts, and skills associated with public history.

Note: Course requires 75 clock hours of supervision in the museum.

HIST 3313
Colonial Latin America

A survey of the political, economic, social and cultural aspects of Latin America to 1825. Emphasis is on cross-cultural accommodation and the role of indigenous, African, and European cultures in shaping Latin American development.

HIST 3323
Modern Latin America

A survey of the political, economic, social and cultural aspects of Latin America since 1825. Emphasis is on cultural values and structures from the colonial period, continuing patterns of authoritarianism, the struggle to establish democratic institutions, and Latin America's role in world affairs.

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
The Renaissance and European Expansion, 1300-1550

Fueled by a growing urban economy and despite the setbacks of the Black Death, Europeans during the Renaissance revived and adapted models of classical learning, created new forms of artistic and vernacular expression, forged national identities, opened up new trade routes, and encountered a New World.

HIST 3443
The Reformation and Early Modern Europe, 1500-1688

A study of the social, political, intellectual and cultural impact of the Protestant Reformation, the Roman Catholic response, the sixteenth and seventeenth-century Wars of Religion, the development of confessional cultures, and the continued rise of the European nation-state in both its absolutist and constitutional forms.

HIST 3463
The Enlightenment, French Revolution, and Napoleonic Eras

Prerequisites: HIST 1503 and 1513

This upper-division course will address the intellectual, social, and political events of the turbulent eighteenth century in Europe, a period known for the Enlightenment, as well as for the French Revolution and the rise and fall of Napoleon's Empire. Historians often argue that this period ushered in many of the hallmarks of the modern world, including nationalism, open class conflict, and popular democracy. The intent of this course is to examine the period in the context of its long-lasting influence upon world events.

HIST 3483
Reaction and Reform, 1815-1871

A study of the changes in the political, cultural, intellectual, and social environments which characterized Europe during the period between the Congress of Vienna through the rise of the modern nation states.

HIST 3493
The Age of Empire, 1871-1919

A study of the changes in the political, cultural, intellectual, and social environments which characterized Europe during the period between the rise of the modern nation states to the end of the First World War.

HIST 3503
Europe Between the Wars, 1919-1939

A study of the changes in the political, cultural, intellectual, and social environments which characterized Europe during the period between the end of the First World War to the beginning of the Second World War.

HIST 3513
Europe Since 1939

A study of the changes in the political, cultural, intellectual, and social environments which characterized Europe during the period between the beginning of the Second World War to the present.

HIST 3533
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.

Note: May not be repeated for credit as HIST 5463 or equivalent.

HIST 3563
History of England

A study of the history of England from national origins to modern times.

HIST 3573
History of Eastern Europe

Prerequisites: HIST 1503 and 1513

A study of the cultural and political history of eastern Europe from the Napoleonic Wars to the present.

HIST 3603
History of Modern East Asia

This course deals with the history of East Asia after 1800. The major stress is placed upon the history of China, Korea, and Japan.

HIST 3703
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.

Note: May not be repeated for credit as HIST 5703 or equivalent.

HIST 3803
History of the Middle East

Political, social, and cultural survey of the history of the Middle East from the rise of Islam to modern times.

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.

Note: May not be 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.

Note: 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 Frontier in American History

Prerequisites: HIST 2003 and 2013, or permission of department head.

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.

Note: May not be repeated for credit as HIST 5033 or equivalent.

HIST 4043 American Constitutional Development

An historical analysis of American Constitutionalism and constitutional law from earliest antecedents to the present time, as seen in the leading documents and cases dealing with judicial review, separation of powers, the federal system, commerce taxation, civil rights, and civil liberties.

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.

Note: May not be repeated for credit as HIST 5053 or equivalent.

HIST 4073 American Diplomatic History, 1776-1912

Prerequisite: HIST 2003

This course is a study of America's diplomatic relationships with other nations and peoples from 1776 to 1912. Of particular emphasis will be the changes in international affairs brought about by the evolving economic and political conditions. This course follows the United States' early struggles in diplomacy through its expansion and eventual emergence as a world power.

HIST 4083 American Diplomatic History, 1912 to the Present

Prerequisite: HIST 2013

This course is a study of America's diplomatic relationships with other nations and peoples from 1912 to the present. Of particular emphasis will be the changes in international affairs brought about by the evolving economic and political conditions. This course follows the United States from its emergence as a world power through two world wars, a cold war, and a war on terrorism.

HIST 4093 American Culture Since 1800

The history and development of American regional and national culture from the early republic to the present. Topics include antebellum nationalism and regional cultures, slave and slaveholding culture, the rise of consumerism, popular and intellectual aesthetic and artistic development, and the evolution of American mass, commercial, and popular culture through the nineteenth and twentieth centuries.

HIST 4103 American Political Ideas

The background and development of American political ideas from the colonial period to the present. Emphasis is placed on colonial political theory, the Founding, conflict and consensus prior to the Civil War, the response to industrialization, the rise of the positive state, nationalism, the New Left and New Right, and current trends.

HIST 4123 African American History

Prerequisite: HIST 2003 or HIST 2013

This course examines the unique role and contribution of African Americans in the overall development of American history from the colonial era to the present. Topics include African societies; black colonial life; the institution of slavery, and African American responses to slavery; the free black community; African American cultural, political, and economic development; issues of assimilation, separatism, and African American responses to institutional racism; the Civil Rights Movement, and recent developments.

Note: May not be repeated for credit as HIST 5123.

HIST 4133 Latinos in the United States

This course is an analysis of the historical and cultural heritage of Latinos who have lived or are currently living in the United States. This course includes the colonial origins of Latino groups and their general migration patterns to the United States. This course also explores the development of Latino communities as well as the relationship between Latinos and social institutions.

Note: May not be repeated for credit as HIST 5133 or equivalent.

HIST 4143
Native American History

Prerequisites: HIST 2003 or HIST 2013

A survey of Native American history from the Archaic period to the present. This course will present an interpretation of the historical experience of the diverse nations native to North America utilizing an ethno- historical approach. Some emphasis will be placed on the formation and operation of United States government policy regarding Native Americans in both the 19th and 20th centuries.

Note: May not be repeated for credit as HIST 5143.

HIST 4153
History of Arkansas

A study of the history of Arkansas from prehistoric times to the present, noting political, social, economic, and cultural trends.

Note: May not be taken for credit after completion of HIST 2153 nor repeated for credit as HIST 5153 or equivalent.

HIST 4163
American History Through Film

Prerequisite: HIST 2013

This course examines 20th century American history through the study of American film, and film as cultural and historical text. Subjects for analysis include the Great Depression, World War II, the Cold War and Cold War culture, the 1960s, Vietnam, and the Reagan era. Emphasis will be on the uses of film as both primary and secondary source material for the study of history.

HIST 4173
History of American Disasters

A comparative examination of the greatest disasters in American history, the response to them, and how they affected the future of the nation.

HIST 4183
American Legal History

This course concerns the history and development of law, legal institutions, and legal culture in the United States from its colonial origins to the present day, with emphasis on the interaction of law with the overall development of American society.

HIST 4193
American Labor History

This course examines the history of working people-men and women, paid and unpaid, of various racial and ethnic groups, in diverse geographic regions-primarily from the Early Republic to the present. This study will include a review of changes in work environments due to industrialization, unionization, and legal decisions.

HIST 4203
Women in American History

A treatment of women in Western and American social history in their lifestyles and economic and family roles.

Note: May not be taken for credit after completion of HIST 3203 nor repeated for credit as HIST 5203 or equivalent.

HIST 4213
Southern Women's History

A social history of the lives of women in the American South from approximately 1700 to the present which examines their lifestyles, economic, and family roles. This study includes, but is not limited to, experiences of Arkansas women.

HIST 4293
Historic Preservation

Prerequisites: HIST 2203 or permission of department head.

Upper-level survey of historic preservation in the United States. Course examines the theory, philosophy, and methods of maintaining the culture of the past. An introduction to the wide range of ideas underpinning the practice of preservation is covered through readings, discussions, presentations, class projects and field trips.

HIST 4403
Interpretation/Education through Museum Methods

Cross-listed: ANTH 4403, MUSM 4403

Prerequisite: 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.

HIST 4483
World Economic History

World Economic History traces the development of the modern global economy from the late middle ages to the present. Special attention is given to the emergence of capitalism in Europe and its migration to other parts of the world.

Note: May not be repeated for credit as HIST 5483 or equivalent.

HIST 4503
History of Christianity

A study of Christianity, from its beginnings to the present day, focusing especially on ancient Mediterranean, medieval European, and modern American Christian traditions. Emphasis will be on the interaction between individual beliefs, group identity, and institutional forces, how each have been shaped by broader social, political and cultural contexts, and finally how these interactions have resulted in profound changes for the Christian religion.

HIST 4513
History of Science

A study of the origins, nature, and development of Western science and its social, economic, and cultural context.

Note: May not be repeated for credit as HIST 5513.

HIST 4713
Social Studies Methods for Secondary Teachers

Prerequisites: SEED 2002 and the completion of 36 hours in the Social Sciences.

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.

Note: 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.

Note: May not be taken for credit after completion of the equivalent course under HIST/POLS 4983 nor repeated for credit as HIST 5813.

HIST 4823
Nationalism

Prerequisites: HIST 1503 and 1513

The course looks at the development of the idea of nation in European and World history in the last two centuries. By using historical examples the course will introduce the students to the current theoretical debate on ethnicity and nationalism. The special attention will be placed on the relationship between state power and the nation. The course will look at ethnicity in history before and after the emergence of effective means of communication, such as the printing press, radio, and television. It will also look at the role culture plays in the formation of national consciousness and how the past was used and abused to drum-up political support.

HIST 4951, 4952, 4953, 4954
Undergraduate Research in History

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

HIST 4963
Senior Seminar

Prerequisites: HIST 1503, 1513, 2003, and 2013

Required course for History/Political Science and History Education majors. Course content will cover a directed seminar in specified American or European History. Research techniques will be emphasized.

HIST 4971
Internship

Cross-listed: POLS 4971

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4972
Internship

Cross-listed: POLS 4972

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4973
Internship

Cross-listed: POLS 4973

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4974 Internship

Cross-listed: POLS 4974

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4975 Internship

Cross-listed: POLS 4975

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4976 Internship

Cross-listed: POLS 4976

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/ trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

HIST 4983 Social Sciences Seminar

Cross-listed: POLS 4983

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, 4992, 4993, 4994 Special Problems in History

Prerequisite: Consent by department head.

A course for majors and minors only.

ICS 1103 PROGRAMMING I

This course is designed to give the student an understanding of established and new methodologies using Microsoft Visual Basic programming. Emphasis is placed on developing logical thinking skills.

ICS 1104 FUNDAMENTALS OF ELECTRICITY

This course is an overall study of the fundamental principles of D.C. and A.C. circuits. A basic study of Ohm's Law, series, parallel and series parallel resistor circuits. The fundamental concepts form the basis for the study of advanced applications of electronic systems. It is necessary for the electronic technician to be able to understand the basic concepts to function as an Electronic Technician.

ICS 1123 SEMICONDUCTORS

This course introduces semiconductors or solid-state components. Topics covered include the diode and applications, transistors, and amplifiers.

ICS 1143 INTRODUCTION TO DIGITAL LOGIC

An introductory course in the study of digital logic systems. Basic digital logic gates, truth tables, numbering systems, and different types of TTL integrated circuits are

studied.

ICS 1153 NETWORKING I

Designed as a foundation course that provides the theory and basic understanding of the hardware and software that comes together to build local area and wide area networks.

ICS 1253 NETWORKING II

Prerequisite: ICS 1153. Builds upon the skills and concepts learned in Networking I. Emphasis will be on the hands-on aspects of personal computer networks using Microsoft and Linux based networking products, including installations and/or expanding a networking system and troubleshooting problems.

ICS 1303 PC MAINTENANCE

This course is designed to prepare individuals to troubleshoot, build, and repair personal computers, workstations, printers, and other computer peripherals. The student will also learn to install, debug, diagnose, and repair software problems associated with PCs.

ICS 1403 DRAFTING AND DESIGN

This class focuses on the basic knowledge and skills required to produce engineering and architectural drawings. Emphasis is given to the development of competencies related to the use of drafting equipment, the production of beginning level engineering drawings, and the production of beginning level architectural drawings.

ICS 1413 ARCHITECTURAL/COMPUTER-AIDED DRAFTING I

This class focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical thinking skills. This class is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

ICS 1423 ARCHITECTURAL/COMPUTER-AIDED DRAFTING II

This class is a continuation of ICS 1413. It focuses on the knowledge and skills required to plan and prepare scale pictorial interpretations of plans and design concepts for residential buildings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical thinking skills. This class is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

ICS 1433 ENGINEERING/COMPUTER-AIDED DRAFTING I

This class focuses on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical-thinking skills. This class is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

ICS 1443 ENGINEERING/COMPUTER-AIDED DRAFTING II

This class is a continuation of ICS 1433. It focuses on the knowledge and skills required to produce advanced level engineering drawings. Emphasis is given to the development of competencies related to solving drafting and design problems that require the individual to understand and apply a wide range of technical knowledge and critical-thinking skills. This class is designed to allow the student to produce drawings as traditional drawings or as computer-aided drawings.

ICS 2115 PROGRAMMABLE CONTROLLERS

Deals with the subject of programmable controllers (PCs). The PC is a microprocessor-based programmable device used in controlling mechanical machinery, energy management systems, computer integrated manufacturing, and other applications. Lecture: 3 hours, laboratory: 6 hours.

ICS 2116 BASICS OF INDUSTRIAL AUTOMATION

An illustrated study of circuit configurations used in industry. Topics to be covered are: solid-state systems used to control D.C. and A.C. motors, electro-mechanical devices, three-phase power, open and closed loop motor control, robotic input and output transducers, various instrumentation and process control classes. Lecture: 9 hours, laboratory: 5 hours.

ICS 2123 INDUSTRIAL FLUID POWER

This course is designed to provide the basic knowledge and application of physical principles involving pumps, cylinders, valves, motors, design, assembly, graphic symbols, and the operation of hydraulic and pneumatic control circuits based on logic principles. Lecture: 4 hours, laboratory: 1 hour.

ICS 2203 COMPUTER SYSTEM COMPONENTS

A study of the internal structure of the microprocessor. The full computer system is analyzed from both aspects of hardware and software. Many of the principles studied apply to computer troubleshooting and computer interfacing. Many of the computer support circuits are studied. Many of the skills learned from Programming I, Operating Systems, and Digital Logic are brought together and enhanced.

ICS 2213 SEMICONDUCTORS II

A continuation of ICS 1123, this course is a study of field effect transistors, thyristors, and linear integrated circuits.

**ICS 2303
PC MAINTENANCE II**

Prerequisite: ICS/CIS 1303.

This course is designed to teach individuals core elements of computer repair based on the A+ Certification exams. The student will build on the knowledge acquired from PC Maintenance I, allowing them to be more prepared to diagnose, and repair computers in the working environment.

**ICS 2991, 2992, 2993, 2994, 2995, 2996
SPECIAL TOPICS FOR INDUSTRIAL CONTROL SYSTEMS**

This course is designed to introduce students to specific areas in Industrial Control Systems. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

**INT 1903
INTERNSHIP**

Provides students with the experience of a job in a business. Students will participate in internship during the final phase of program completion. There will be contracts signed between the school, students, and training site stating the rules and objectives of internship.

**INT 2903, 2904
INTERNSHIP**

Provides students with experience in a business setting. Students will participate in internship during the final phase of program completion. There will be contracts signed between the school, students, and training site stating the rules and objectives of the internship.

**JOUR 1163
Basic Photography**

Cross-listed: ART 1163

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 1411, 1421, 2411, 2421, 3411, 3421, 4411
Print Practicum**

Students will learn practical skills in the areas of writing, layout and design and photography while working an assigned number of hours each week for the student newspaper.

**JOUR 1811, 1821, 2811, 2821
Broadcast Practicum**

Practical work experience in the studios of KXRJ FM and Tech television productions.

Note: Only four hours count for the journalism major.

**JOUR 1911, 1921, 2911, 2921, 3911, 3921, 4911, 4921
Multimedia Practicum**

Practical work experience in the multimedia lab including work as Web news manager, producer, Web content director.

**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 Telecommunication**

A study of the technical, legal, programming, advertising and journalistic aspects of the telecommunication industry with practical exercises in radio, television and the Internet.

**JOUR 2163
Introduction to Multimedia**

Prerequisite: JOUR 2133

Introduction to Digital Multimedia is designed to teach fundamental principles of multimedia to give students a working understanding of digital media formats and their applications.

**JOUR 2173
Introduction to Film**

Cross-listed: ENGL 2173

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.

Note: JOUR 2173 may be used to fulfill the fine arts General Education requirement.

Note: JOUR 2173 may not be repeated for credit after the completion of ENGL 2173.

**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, design, 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 and JOUR 2143

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
New Media News Gathering**

Prerequisite: JOUR 2143, JOUR 3183 or consent of instructor.

Study and practice in producing news packages, including training and experience in new and traditional news gathering, preparing scripts and digital video, and operating cameras, editing decks, and other studio and field equipment.

**JOUR 3273
Public Relations Writing**

Prerequisites: JOUR 3173.

Provides the knowledge and skill training for students to become effective public relations writers. The course will focus on style and content of writing news releases, speeches, newsletters, brochures, annual reports and other public relations communications.

**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.

Note: Only four hours count for the journalism major.

**JOUR 4011, 4012, 4013
Practical Editing**

Actual experience editing news. Arranged with an instructor.

Note: May be taken for a maximum of three hours.

**JOUR 4023
Social Media**

This course offers students a solid understanding of social media, its roots and how to effectively utilize this culture from personal and corporate perspectives.

**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.

Note: For majors and non-majors.

**JOUR 4043
Journalism Ethics**

A study of ethical theory and basic principles needed in solving ethical challenges facing media professionals.

**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.

Note: May be repeated for credit as JOUR 4053 or 5053 when course content changes.

**JOUR 4073
Graphic Communication**

Prerequisites: JOUR 3173 and JOUR 3273

Presents the elements of effective print design as well as the other decision making processes involved with creating an effective visual communication (type, art and illustration, basic design principles, paper and ink, printing processes, etc.). Students will create visually appealing projects using the industry standard design and photo manipulation software programs.

**JOUR 4083
Computer Mediated Communication**

A study of communication processes in the Digital Age. Discussions and content will include contemporary emerging communication technologies and exploration into the impact those technologies have and will likely have on an individual and diverse social communities.

**JOUR 4091, 4092, 4093, 4094
Internship**

Credit for work in professional journalistic settings. Credit hours will be based on hours on the job.

Note: 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.

Note: May not be repeated for credit as JOUR 5113.

**JOUR 4123
Laws of Communication**

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 News Production**

Prerequisite: JOUR 3193 or consent of instructor.

Study and practice in shooting, writing, editing, and producing news, sports and feature packages. Stories will be aired during live news programming on Tech TV and placed in student video portfolios. Practical experience will focus on operating field and studio gear, including digital cameras and editing decks, and use of new media news gathering equipment.

**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 4163
Advanced Photography

Cross-listed: ART 4163

Prerequisite: JOUR (ART) 1163 or consent of instructor.

An introduction to advanced photographic techniques including digital photography. Various historic and current theories of visual communication provide a substantive base for the application of techniques.

JOUR 4173
Public Relations Project

Prerequisites: JOUR 3173, JOUR 3273, JOUR 4073, or consent of instructor.

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 4421
Print Practicum

Students will learn practical skills in the areas of writing, layout and design and photography while working an assigned number of hours each week for the student newspaper.

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.

Note: Only four hours count for the journalism major.

JOUR 4883
Mass Communication Theory

Prerequisite: 15 semester hours of Journalism.

This course provides an examination of the major theories and domains of mass communication research, emphasizing mass media effects. Students are acquainted with the assumptions, propositions, and empirical research foundations of these theories. The course covers the historical evolution and recent trends in mass communication theory as well as the application of theories to specific contexts such as marketing or organizational communication.

JOUR 4951, 4952, 4953, 4954
Undergraduate Research in Journalism

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

JOUR 4991, 4992, 4993, 4994
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.

LE 1003
INTRODUCTION TO LAW ENFORCEMENT

This course covers the basics of law enforcement including the responsibilities, opportunities, and advances in the field of law enforcement. The instructor selects pertinent and current topics as the focus of the course.

LE 1013
AMERICAN LEGAL SYSTEM

A survey of basic framework of the American legal system, including a brief history, civil procedure, constitutional law, common law, administrative regulation with particular emphasis on the ethical, sociocultural, and political influences affecting such environments.

**LE 1023
JUDICIAL PROCESS**

A comprehensive study of judicial process, criminal procedure, and behavior in criminal and civil law as well as the structure and operations of the local, state, and national court systems.

**LE 1033
PUBLIC RELATIONS IN LAW ENFORCEMENT**

A study of proper law enforcement conduct in the public forum including public opinion, mass media, and solving public relations problems.

**LE 1043
CRIMINAL, CIVIL, AND JUVENILE LAW**

An in-depth look at state and local law including structure, statuses, and roles.

**LE 1053
SPANISH FOR LAW ENFORCEMENT**

Useful terminology and expressions for the law enforcement situation with a minimum of grammar.

**LE 1113
ETHICS IN LAW ENFORCEMENT**

Students will be introduced to controversies and moral issues that are likely to be encountered while practicing in the field of law enforcement. This class will examine issues such as arrest, deadly force, plea bargaining, policy adherence and the equal treatment of the public. This course will help students examine their values and develop skills to make appropriate moral decisions.

**LE 1123
COMMUNITY DISASTER RESPONSE**

This class examines the important role of community members during times of disaster. Students will be introduced to established best practices in basic response techniques. Topics covered in this class include basic fire safety, basic medical operations, search and rescue, and disaster psychology.

**LE 2003
INTERVIEW, INTERROGATION, AND TESTIMONY**

Designed to develop interviewing and interrogation techniques, critical thinking, and persuasive speaking ability. Includes lecture, discussion, research, study of courtroom testimony, classroom debates, and presentations.

**LE 2013
INTRODUCTION TO COMPUTER CRIME**

Prerequisite: BUS 1303 Intro to Computers. This course examines the use of computers in the commission of crimes and civil wrongs and basic computer forensic investigation techniques. The course emphasizes techniques for indentifying financial fraud, identity theft, locating and picking victims and offenders with a survey of associated laws, regulations, and international standards.

**LE 2991, 2992, 2993, 2994, 2995, 2996
SPECIAL TOPICS FOR LAW ENFORCEMENT**

This course is designed to introduce students to specific areas in Law Enforcement. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

**LPN 1101
VOCATIONAL, LEGAL, AND ETHICAL CONCEPTS**

Teaches vocational responsibilities of the Practical Nurse to the patient, family community, and coworkers. Nursing organizations, local, state and national health resources, and concepts of delegation appropriate to the level of practice are also covered.

**LPN 1102
PHARMACOLOGY I**

Pharmacology I is an introduction to the history of drugs, use of drug references, principles of drug actions and interaction, principles of drug administration, and their legal implications for the nurse.

**LPN 1111
NURSING OF THE GERIATRIC PATIENT**

This course covers the normal aging processes, characteristics of aging, special problems associated with aging and caring for the aging adult.

**LPN 1114
BASIC NURSING PRINCIPLES AND SKILLS I**

Co-requisite: LPN 1115. This course covers the fundamental principles, skills, and attitudes needed to give nursing care and prevent the spread of disease. Procedures used in the care of the sick and the ability to adapt them to various situations are discussed. Students will learn to document their observations and interventions.

**LPN 1115
CLINICAL I**

Co-requisite: LPN 1114. Clinical skills will be practiced, observed, and evaluated by the instructors in the lab and clinical settings.

**LPN 1121
NUTRITION IN HEALTH AND ILLNESS**

The importance of nutrition and its relation to proper growth and functioning and the maintenance of health are covered.

LPN 1122
BODY STRUCTURE AND FUNCTION

Includes anatomy and physiology of the human body and its systems, a foundation for understanding the principles of maintaining positive health, as well as understanding deviations from normal. It is the basis for Nursing of the Adult Patient, Maternal-Child Nursing, Pediatric and Geriatric Nursing. Principles are integrated with this course.

LPN 1171
NURS ADLT MED/SURG CON I

Study of common conditions of illness and the nursing care of adult patients in acute, sub-acute, or convalescent stages of illness. The basis for this course is Body Structure and Function and includes aspects and principles of Nutrition; Basic Nursing; Pharmacology; Vocational, Legal, and Ethical concepts with attention to cultural diversity.

LPN 1202
NURSING OF ADULTS WITH MEDICAL/SURGICAL CONDITIONS II

Continuation of Nursing of Adults with Medical-Surgical Conditions I. The study of common conditions of illness and the nursing care of adult patients in acute, sub-acute, or convalescent stages of illness. The basis for this course is Body Structure and Function and includes aspects and principles of Nutrition, Basic Nursing, Pharmacology, Vocational, Legal, and Ethical concepts with attention to cultural diversity. Nutrition, pharmacology and basic nursing principles are integrated throughout this course.

LPN 1203
NURSING OF MOTHERS AND INFANTS

Nutrition for the mother and the developing fetus and the basic nursing skills to care for the mother during antepartum, intrapartum, and postpartum periods are studied.

LPN 1210
CLINICAL II

Prerequisite: LPN 1115. This course focuses on the skills needed by the nurse to provide the care in a safe and comforting manner.

LPN 1211
BASIC NURSING PRINCIPLES AND SKILLS II

Prerequisite: LPN 1114. This course covers the advanced skills and procedures concerned with administrating safe patient care. Skills related to the maternal-child and pediatric patients are included.

LPN 1221
PHARMACOLOGY II

Prerequisite: LPN 1102. A continuation of LPN 1102. The preparation of drugs by enteral, parenteral, and percutaneous administration is continued. Intravenous medications, delivery systems, and techniques for administration are included in this course.

LPN 1302
NURSING OF CHILDREN

Principles of growth and development, nursing of the infant through adolescence and the behavior of well and sick children are studied in this course. Differences in the functioning of the child=s body systems are contrasted with that of the adult patient as well as differences in the child=s response to illness.

LPN 1303
NURSING OF ADULTS WITH MEDICAL/SURGICAL CONDITIONS III

Prerequisite: LPN 1202.
A continuation of Medical-Surgical Nursing. This course is the study of the body system disorders, their diagnostic methods, treatment or surgical procedures, therapeutic nutrition, and pharmacological modalities.

LPN 1312
CLINICAL III

Prerequisite: LPN 1115. Includes clinical areas in the mental health, pediatric, and specialty areas of the clinical facilities. The opportunity to practice advanced basic nursing and pediatric procedures will be offered during these rotations.

LPN 1322
MENTAL HEALTH

This course presents topics such as personality development patterns, developmental task throughout the life-cycle, mental disease, and emotional problems as well as chemical dependency. Geriatric, maternal, and pediatric problems are included. Therapeutic communication techniques are stressed.

LPN 2991, 2992, 2993, 2994, 2995, 2996
SPECIAL TOPICS FOR LPN

This course is designed to introduce students to specific areas in Practical Nursing. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

MATH 0803
Beginning Algebra

Content of this course is as follows: the language of algebra, fundamental operations, signed numbers, equations and problem solving.

Note: 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.

Note: 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, grade of C or better in MATH 0803, or consent of the Mathematics Department.

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.

Note: 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.

Note: 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.

MATH 1003 **College Mathematics**

Prerequisites: Score of 19 or above on the mathematics subscore of the Enhanced ACT, score of 460 or above on the quantitative portion of SAT, score of 41 or above on the quantitative portion of the COMPASS mathematics section, or make a grade of C or higher in Math 0903.

The course focuses upon the mathematics of contemporary life. Topics include Planning and Scheduling schemes from Management Science, Data Analysis, Probability and Inference from Statistics, Voting Systems and Division Schemes from the science of Social Choice, and various Growth Models.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 1113 **College Algebra**

Prerequisites: Score of 19 or above on the mathematics portion of the ACTE exam, or score of 460 or above on the quantitative portion of SAT, or score of 41 or above on the COMPASS mathematics section, 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.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

Note: May not be taken for credit after completion of MATH 2703 or any higher level mathematics course.

MATH 1203 **Plane Trigonometry**

Prerequisite: MATH 1113 or consent of Mathematics Department.

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.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 1914 **Precalculus**

Prerequisites: Completion of high school algebra I and II with a grade of C or better and a score of 19 or above on the mathematics portion of the ACTE exam, or score of 460 or above on the quantitative portion of the SAT, or score of 41 or above on the COMPASS mathematics section, or MATH 1113 and MATH 1203, or a grade of C or better in MATH 0903.

This course is designed to provide additional mathematical background before enrolling in the calculus sequence.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2033 **Mathematical Concepts I**

Prerequisite: MATH 1113, elementary education major

Elementary set theory, numeration systems, elementary number theory and the real number system.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2043 **Mathematical Concepts II**

Prerequisites: MATH 2033, elementary education major

A continuation of MATH 2033, including a study of the elementary concepts of probability and statistics, and an informal study of geometry.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2163 **Introduction to Statistical Methods**

Prerequisites: MATH 1113 or consent of the instructor.

Descriptive statistics, random variables, probability and sampling distributions, estimation, hypothesis testing, regression, analysis of variance, non parametric techniques.

Note: May not be taken for credit after completion of MATH 3153.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2223 **Quantitative Business Analysis**

Prerequisites: Completion of high school algebra I and II with a grade of "C" or better and a score of 22 or higher on the mathematics portion of the ACTE exam or MATH 1113.

This course is designed to develop the ability to use quantitative methods in accounting, business, and economics; it includes models of cost, revenue, and profit, linear programming, and probability.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2243 **Calculus for Business and Economics**

Prerequisites: Completion of high school algebra I and II with a grade of C or better and a score of 22 or higher on the mathematics portion of the ACTE exam 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.

Note: May not be taken for credit after completion of MATH 2914 or equivalent.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2703 **Discrete Mathematics**

Prerequisite: MATH 1113

A study of graph theory, trees, combinatorics, logic, and Boolean Algebra.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2914 **Calculus I**

Prerequisites: Math ACTE score of 24 or higher, or a grade of C or higher in MATH 1914 or MATH 1203 or consent of instructor.

This is the first of two courses covering the calculus of functions of a single variable. The content covers differentiation of all single variable functions and introduces integration of functions.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 2981, 2982, 2983 **Special Topics in Mathematics**

Prerequisites: Math ACTE score of 22 or higher, or MATH 1113, or consent of instructor.

This course will be offered on an as-needed basis to cover topics in mathematics that are not otherwise covered in the curriculum. The content and credit for this course will vary according to the interests and needs of the student. This course may be repeated for credit if the course content differs.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 3003 **Foundations of Number Systems**

Prerequisite: MATH 2703

A brief review of elementary set theory, followed by the construction of the natural numbers, the integers, the rational numbers, the real numbers and the complex numbers accompanied by a development of the order and field properties.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 3033 **Methods of Teaching Elementary Mathematics**

Prerequisite: MATH 2043 and admission to Stage II.

A course on methods of teaching the mathematics of the elementary school using mathematical concepts and principles taught in these grades.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 3203 **Introduction to Analysis**

Prerequisite: MATH 3003

A careful development of the real number system and the theory of calculus on the real line.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 3243 **Differential Equations I**

Prerequisite: MATH 2924

A study of differential equations of the first order; linear equations of higher order including the methods of undetermined coefficients and variation of parameters; linear equations with constant coefficients; special equations of order two and systems of linear first-order differential equations using matrices.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4003 **Linear Algebra I**

Prerequisite: MATH 2924

Matrices and matrix algebra, systems of linear equations, determinants, eigenvalues, eigenvectors, general vector spaces, linear transformations.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4033 **Abstract Algebra I**

Prerequisite: MATH 3003

A study of Groups and other algebraic structures. Topics include sub-groups, normal sub- groups, abelian groups, groups of permutations, homomorphisms, kernels, and range.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4103 **Linear Algebra II**

Prerequisites: 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.

Note: MATH 5103 may not be taken for credit after completion of MATH 4103 or equivalent.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: MATH 5113 may not be taken for credit after completion of this course.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4123 **Mathematical Modeling**

Prerequisites: MATH 2703 and MATH 3243

This course provides an introduction to the mathematical modeling process and applies this process to problems that may be modeled with pre senior 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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4133 **Abstract Algebra II**

Prerequisite: MATH 4033

Groups, subgroups, homomorphisms, isomorphisms, complex numbers, finite groups.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4173 **Advanced Biostatistics**

Prerequisites: 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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4263 **Mathematical Statistics**

Prerequisite: MATH 3153

This is an introductory course in mathematical statistics. Topics include distribution functions (both discrete and continuous), multivariate distributions, distributions of functions of random variables, and statistical inference.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: MATH 5273 may not be taken for credit after completion of this course.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4343 **Introduction to Partial Differential Equations**

Prerequisites: MATH 2934 and MATH 3243

This course is an introduction to partial differential equations with emphasis on applications to physical science and engineering. Analysis covers the equations of heat, wave, diffusion, Laplace, Dirichlet and Neumann equations. Course is suitable for senior level or first year graduate students in Mathematics, Physics, and Engineering.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

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.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4772
Mathematics Teaching Practicum

A course designed to provide mathematics education majors with experience in teaching mathematics and assessing student performance.

Note: A grade of C or better must be earned in the course used to satisfy the general education mathematics requirement.

MATH 4951, 4952, 4953, 4954
Undergraduate Research in Mathematics

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

MATH 4971
Mathematics Senior Seminar

Prerequisites: MATH 3203 or MATH 4033, or departmental approval.

Students will engage in a research project under the guidance of faculty research advisors. The research area will depend on the interests of the students and available expertise of faculty advisors. The students will present their findings before their peers, faculty advisors, and members of the Mathematics Department Assessment Committee.

MATH 4991, 4992, 4993, 4994
Special Problems in Mathematics

The content and credit for this course will be designed to meet the needs of the student.

Note: A grade of C or better must be earned in this course if being used to satisfy the general education mathematics requirement.

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 bachelor of music education.

MUS 1001, 1002, 3001, 3002, 3003
Applied Music - Trumpet

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) requires permission of the department head and is required of all music majors. 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.

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 1011, 1012, 3011, 3012, 3013
Applied Music - French Horn

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) requires permission of the department head and is required of all music majors. 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.

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 1021, 1022, 3021, 3022, 3023
Applied Music - Trombone

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) requires permission of the department head and is required of all music majors. 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.

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 1031, 1032, 3031, 3032, 3033
Applied Music - Euphonium

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) requires permission of the department head and is required of all music majors. 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.

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 1041, 1042, 3041, 3042, 3043
Applied Music - Tuba

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) requires permission of the department head and is required of all music majors. 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.

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 1131, 1132, 3131 **Applied Music - Bass**

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) requires permission of the department head and is required of all music majors. 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.

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 1141, 1142, 3141, 3142, 3143 **Applied Music - Percussion**

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) requires permission of the department head and is required of all music majors. 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.

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 1151 **Class Guitar I**

Prerequisite: Music major

Introductory class instruction in folk and popular styles of guitar playing with emphasis on guitar as a teaching tool for classroom music instruction.

MUS 1201, 1202, 3201, 3202, 3203 **Applied Music - Piano**

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) requires permission of the department head and is required of all music majors. 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.

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 1211, 1212, 3211, 3212, 3213 **Applied Music - Harpsichord**

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) requires permission of the department head and is required of all music majors. 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.

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 1221, 1222, 3221, 3222, 3223 **Applied Music - Organ**

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) requires permission of the department head and is required of all music majors. 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.

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 1231, 1232, 3231, 3232, 3233 **Applied Music - Voice**

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) requires permission of the department head and is required of all music majors. 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.

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 1241 **Italian Diction**

Prerequisite: Vocal major

Co-requisite: MUS 1232

Study of the rules of pronunciation for Italian lyric diction.

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.

MUS 1321
Jazz Piano

Offered: As needed

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

Prerequisite: Music major

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.

\$10 fee.

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. Spring semester stresses symphonic and concert bands in the study and performance of quality literature.

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
Brass Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 1541
Percussion Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 1551
String Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 1571
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.

MUS 1581
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.

Note: Two or three concerts are presented on campus each semester. Off-campus performances include tours and public relations functions for the university.

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.

Note: Each course may be repeated three times.

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.

Note: Credit will be given for one leading part or for a series of supporting parts.

Two hours weekly.

MUS 1621, 3621
Music Theatre Practicum

Offered: As needed

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.

MUS 1681, 3681
Concert Chorale

Open to all students by audition. A select choral ensemble of choral music from all historical periods.

Two or three major concerts are presented each semester.

MUS 1703
Music Fundamentals

Offered: As needed

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
Theory I

Co-requisites: MUS 1731, 1741

Study of scales, triads, seventh chords, diatonic harmonies, simple modulation. Introduction to small forms.

MUS 1723
Theory II

Co-requisites: MUS 1731, 1741

Study of scales, triads, seventh chords, diatonic harmonies, simple modulation. Introduction to small forms.

MUS 1731
Ear Training I

The elements of music fundamentals, both written and aural.

MUS 1741
Ear Training II

The elements of music fundamentals, both written and aural.

MUS 2003
Introduction to Music

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

Prerequisites: Piano major or permission of instructor.

Development of basic accompanying techniques. Class coaching and presentation one hour weekly, plus assigned accompanying responsibilities in a variety of media.

Note: May be repeated three times.

MUS 2241
German Diction

Prerequisite: Vocal major

Co-requisite: MUS 1232

Study of the rules of pronunciation for German lyric diction.

MUS 2251
French Diction

Prerequisite: Vocal major

Co-requisite: MUS 1232

Study of the rules of pronunciation for French lyric diction.

MUS 2441
Class Voice

Offered: Fall

Prerequisite: Music major

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

Offered: Fall

(Non music majors) Development of basic vocal techniques through group participation and solo singing.

Supervised practice two hours per week.

MUS 2713
Theory III

Co-requisites: MUS 2731, 2741

More advanced harmonic concepts, modulation, chromatic harmonies. Further study of larger forms.

MUS 2723
Theory IV

Co-requisites: MUS 2731, 2741

More advanced harmonic concepts, modulation, chromatic harmonies. Further study of larger forms.

MUS 2731
Ear Training III

Further work in more advanced ear training and sight singing.

MUS 2741
Ear Training 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

Prerequisites: Successful completion of MUS 3332 or instructor approval.

Laboratory experience in improvisation in all jazz styles.

Note: This course may be repeated for credit.

MUS 3322
Theory of Improvisation (Jazz)

Prerequisites: MUS 1713, 1723, 1441, and/or instructor approval.

Music theory, materials and practices for improvising or extemporaneous playing.

Note: May not be repeated for credit. May not be taken for credit after completion of MUS 3332.

One hour class, two hour laboratory per week.

MUS 3332
Theory of Improvisation (Jazz)

Prerequisite: Successful completion of MUS 3322

Advanced music theory, materials and practices for improvising or extemporaneous playing.

Note: May not be repeated for credit.

One hour class, two hour laboratory per week.

MUS 3401
Brass Instruments

Prerequisite: Music major

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 3421
Woodwind Instruments, Double Reeds

Prerequisite: Music major

A study of playing and teaching techniques of the woodwind family (oboe, bassoon). Playing of selected instruments will be developed through major scales and grade one and two solos or methods.

MUS 3431
Woodwind Instruments, Single Reeds

Prerequisite: Music major

A study of playing and teaching techniques of the woodwind family (flute, clarinet, saxophone). Playing of selected instruments will be developed through major scales and grade one and two solos or methods.

MUS 3441
Instrumental Concepts

Prerequisites: Vocal or Keyboard major

A study designed to give non-instrumental music education majors functional knowledge of band and orchestral instruments.

MUS 3442
Piano Pedagogy

Offered: 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 3481
Stringed Instruments

Prerequisite: Music major

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 3531
Brass Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 3541
Percussion Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 3551
String Ensembles

Open to all students. Membership selected by audition.

Two hours weekly.

MUS 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.

MUS 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.

Note: Two or three concerts are presented on campus each semester. Off-campus performances include tours and public relations functions for the university.

MUS 3692
History of Music III

Prerequisite: MUS 2723, music major or permission of instructor.

A study of 20th century music. Includes one unit of non- western music.

MUS 3702
Music Educational Technology

Prerequisites: Music major with junior standing.

Applications of Technology in Music Education. An overview of current technologies to enhance music instruction, assessment, and productivity by the music educator.

MUS 3712
Counterpoint

Offered: As needed

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
Instrumental and Choral Arranging

An introduction to scoring for instrumental and choral groups to meet the needs of adapting music to meet the needs and ability levels of school performing groups and classroom situations.

MUS 3771, 4771, 4772
Composition

Offered: As needed

Prerequisites: 16 hours of music theory and senior standing or consent of instructor.

The study of basic compositional techniques of twentieth-century works and completion of composition project.

MUS 3772
Composition

Offered: Fall

Prerequisites: MUS 2723 (Theory IV) or permission of instructor.

A study of Western Art music from ancient civilization to A.D. 1750.

MUS 3773
History of Music I

Offered: Fall

Prerequisites: 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 3802
Principles of Conducting

Offered: 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 3853
Music in the Elementary Classroom

Prerequisites: MUS 2723, successful completion of Keyboard Exit Exam, and SEED 2002 or permission of instructor.

A study of current practices, methods, and materials for teaching general music to elementary school children with emphasis on curriculum development and diversity in the classroom.

MUS 4001
Senior Recital

Prerequisite: Six semesters of major applied study.

Required of all music education majors.

\$175 Applied Music fee.

MUS 4201
Accompanying Seminar

Prerequisite: Two 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.

Note: May be repeated three times.

Note: 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

Prerequisite: Music major

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

Offered: Spring

Prerequisites: Admission to Stage II of the Teacher Education program.

Intensive on campus exploration of the principles of curriculum construction, teaching methods, use of community resources, evaluation as related to teaching music, and dealing with diversity in the classroom.

MUS 4712
Form and Analysis

Offered: 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

Open to all students. 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

Offered: 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

Offered: Spring

Prerequisite: Junior standing

Introduction to and comparison of vocal solo literature and the teaching of vocal technique.

MUS 4853
Music of the World's Peoples

Cross-listed: ANTH 4853

Open to students in all majors. A survey of predominantly non-Western world music cultures with attention to sonic structures, musicians, musical instruments, and socio-cultural contexts of music making. Listening emphasized.

MUS 4883
Workshop in Music

Offered: As needed

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 4951, 4952, 4953, 4954
Undergraduate Research in Music

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

MUS 4972
Marching Band Techniques

Offered: Fall

Prerequisite: Music majors

A study of the problems, practices, techniques, and the organization and administration of the marching band.

MUS 4991, 4992, 4993, 4994
Special Problems in Music

Offered: As needed

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.

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 2043
Honors Introduction to Philosophy

Prerequisites: Admission to University Honors or permission of University Honors Director.

A survey of basic problems in the major areas of philosophical inquiry-metaphysics, epistemology, ethics, esthetics, and philosophy of religion. Special emphasis will be placed on critical thinking and in-class discussion.

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 Political Thought

Cross-listed: POLS 3063

An examination of the major contributions to political thought during the Modern Era.

Note: Completion of POLS 2253 recommended.

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 3253
Classical Political Thought

Cross-listed: POLS 3253

An examination of the major contributions to political thought during the Classical Age, the Medieval Era, and the Renaissance.

Note: Completion of POLS 2253 recommended.

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 4951, 4952, 4953, 4954
Undergraduate Research in Philosophy

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

PHIL 4991, 4992, 4993, 4994
Special Problems In Philosophy

Admission requires consent of department head.

PHSC 1001
Orientation to Physical Science

Introduction to vital university affairs, department and university resources and curriculum. The course emphasizes information and skills that increase a student's likelihood of a successful college career. All students majoring in programs within the Department of Physical Sciences are strongly encouraged to take this course during their first fall semester on the Arkansas Tech University campus.

PHSC 1004

Principles of Environmental Science

Cross-listed: BIOL 1004

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. \$20 laboratory fee.

PHSC 1011 Orientation to Physical Science II

Continuation of PHSC 1001. Introduction to programs of study and employment opportunities for students of the physical sciences. All students majoring in programs within the Department of Physical Sciences are strongly encouraged to take this course during their spring semester on the Arkansas Tech University campus.

PHSC 1013 Introduction to Physical Science

Prerequisite: A score of 19 or above on the mathematics section of the ACTE exam 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. Includes topics in physics and chemistry and may include other topics from other disciplines in physical science such as astronomy, meteorology, and/or geology.

Note: May not be taken for credit after completion of two laboratory courses in the physical science disciplines.

Note: To enroll in an internet section (TC1) of this course, the prerequisite COMS 1003 or equivalent is required.

PHSC 1021 Physical Science Laboratory

Co-requisite or Prerequisite: 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.

Note: To enroll in an internet section (TC1) of this course, the prerequisite COMS 1003 or equivalent is required.

PHSC 1031 Honors Physical Science Lab

Prerequisite: Must be accepted into ATU Honors program to enroll.

Introduction to Physical Sciences for the Honors program including topics from physics, chemistry, geology, astronomy and meteorology.

\$10 lab fee.

PHSC 1033 Honors Introduction to Physical Science

Prerequisites: Admission to University Honors or permission of instructor.

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.

PHSC 1051 Observational Astronomy Laboratory

Offered: Fall

Prerequisites: A score of 19 or above on the mathematics section of the ACTE exam or completion of MATH 0903 with a grade of "C" or better.

Co-requisite: 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.

Note: When taken concurrently with PHSC 1053, this course satisfies the general education physical science laboratory requirement upon successful completion of both courses.

Note: 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

Offered: Fall

Prerequisites: A score of 19 or above on the mathematics section of the ACTE exam or completion of MATH 0903 with a grade of "C" or better.

Co-requisite: PHSC 1051 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.

Note: When taken concurrently with PHSC 1051, satisfies general education physical science laboratory requirement upon successful completion of both courses.

Note: 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.

PHSC 1074 **Physical Science Inquiry**

Prerequisites: A score of 19 or above on the mathematics section of the ACTE exam or the completion of MATH 0903, Intermediate Algebra, with a grade of "C" or better.

This course is designed to model physical science teaching and learning through the process of inquiry. Topics explored are Interactions and Energy, Forces, Systems, Behavior of Gases, Physical Changes, and Chemical Changes. The focus is upon the construction of knowledge regarding science content and process skills essential to the preparation of teachers of physical science in early childhood education. It is recommended for early childhood education majors seeking to fulfill undergraduate requirements in preparation for upper level science methods courses and is equivalent to 3 hours of lecture and 3 hours of laboratory experience in physical science. However, the course requires that students participate as active learners in an activity-based, cooperative learning style curriculum.

\$10 laboratory fee.

PHSC 3033 **Meteorology**

Offered: Spring

Prerequisites: PHSC 1013 or PHYS 2014 or CHEM 1114 or CHEM 2124

A study of the weather, the physics of the atmosphere, and associated phenomena.

PHSC 3051 **Observational Astronomy Laboratory**

Offered: Spring

Prerequisite: MATH 1113

Co-requisite: 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.

Note: 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**

Offered: Fall

Prerequisite: MATH 1113

Optional co-requisite: 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.

Note: 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.

Note: Duplicate credit for previously offered PHSC 3043 is not allowed.

PHSC 3213 **Science Education in the Elementary School**

Cross-listed: BIOL 3213

Prerequisites: Junior standing, ECED 2001, ECED 2002, and at least six credit hours in science.

An overview of the most recent and research-based strategies and techniques for planning, teaching, and assessing elementary science. Inquiry-based methods and other constructivist approaches as described in the National Science Education Standards will be emphasized. Design and execution of learning activities for an elementary school setting are required.

Note: To enroll in an internet section (TC1 or AT1) of this course, one of these prerequisite courses is required: COMS 1003, EDMD 3013, or equivalent.

Lecture two hours, laboratory two hours; three credit hours. \$10 laboratory fee.

PHSC 3223 **Science Education in the Middle Level**

Cross-listed: BIOL 3223

Offered: Spring

Prerequisites: 16 hours in science and MLED 2001.

This course is designed to provide pre-service teachers with an integrated approach to the teaching of science in the middle grades. Theoretical and practical aspects of teaching science will be explored and students will develop curricular materials based on their explorations.

Lecture two hours, laboratory 2 hours. \$10 laboratory fee.

PHSC 3233 Science Education in the Secondary School

Cross-listed: BIOL 3233

Offered: Fall

Prerequisites: 16 hours in biology or 16 hours in physical science and SEED 2002.

This course will examine the issues of nature and history of science, developing lessons and assessments, and science education standards for the prospective secondary school teacher. Curriculum development, including assessment and planning skills, utilizing various instructional media and inquiry methodology are emphasized. Design and execution of learning activities for a secondary school setting are required.

Lecture two hours and lab two hours. \$10 laboratory fee.

PHSC 3252 The Nature and Context of Science

Cross-listed: BIOL 3252

Prerequisite: At least 12 hours of science courses.

This seminar course examines science from a holistic perspective. It will concentrate on examining how current science develops scientific knowledge including unifying concepts across scientific disciplines, the place of science within modern society, technology and its role in science and society, and current scientific methodology.

PHSC 4003 History and Philosophy of Science

Cross-listed: BIOL 4003

Prerequisite: a Sophomore-level science course (or higher).

A course in the historical development and philosophical basis of modern science.

Note: 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.

Co-requisite: 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.

PHYS 1114 Applied Physics

Offered: Fall

A survey of selected topics in physics. The "scientific method", mechanics, fluid mechanics, heat, electricity, sound, light, and nuclear radiation will be studied.

Note: 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 2000 Physics Laboratory I

Co-requisite: PHYS 2014 or PHYS 2114.

PHYS 2010 Physics Laboratory II

Co-requisite: PHYS 2024 or PHYS 2124.

PHYS 2014 Physical Principles I

Offered: Fall and summer (on demand).

Prerequisite: A grade of C or better in MATH 1113 or consent of the instructor.

Co-requisite: PHYS 2000

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

Offered: Spring and summer (on demand).

Prerequisite: PHYS 2014 or permission of instructor.

Co-requisite: PHYS 2010

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

Offered: Fall

Prerequisite or co-requisite: MATH 2924

Co-requisite: PHYS 2000

Introductory mechanics, heat and thermodynamics, kinetic theory, and sound.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

PHYS 2124
General Physics II

Offered: Spring

Prerequisite: Permission of instructor; prerequisite or co-requisite, MATH 2934.

Co-requisite: PHYS 2010

Introductory electricity and magnetism, wave motion, optics, and elementary quantum concepts.

Lecture three hours, laboratory three hours. \$10 laboratory fee.

PHYS 3001, 3011, 4001, 4011
Colloquium

Offered: On 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

Offered: Spring even years

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

Offered: Fall even years

Prerequisite: PHYS 2114

Co-requisite: MATH 3243

The conservation laws. Euler's angles. Lagrange's and Hamilton's equations.

PHYS 3033
Radiation Health Physics

Offered: On 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.

PHYS 3042
Intermediate Physics Laboratory

Offered: Fall odd years

Prerequisites: PHYS 2114 and 2124

For physical science education majors. This course expands and refines essential content and laboratory skills through the modeling and experimental investigation of topics in both classical and modern physics.

Note: Will not satisfy the physics elective requirement for students majoring in physical science.

Laboratory three hours. \$10 laboratory fee.

PHYS 3133 **Theory of Electricity and Magnetism**

Offered: Spring even years

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, and Maxwell's equations.

PHYS 3143 **Electronics**

Offered: On demand

Prerequisite: PHYS 2124 or ELEG 2113

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**

Offered: Fall odd years

Prerequisites: PHYS 2114, 2124; CHEM 2124.

Co-requisite: 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.

PHYS 3213 **Modern Physics**

Offered: Spring odd years

Prerequisite: PHYS 2124

Introduction to relativity, wave-particle interactions, atomic structure, quantum mechanics, quantum theory of the hydrogen atom, statistical mechanics, nuclear structure, and elementary particles.

PHYS 3991, 3992, 3993 **Special Problems in Physics and Astronomy**

Offered: On demand

Prerequisite: 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 4003 **Thermodynamics and Statistical Mechanics**

Offered: Fall even years

Prerequisite: PHYS 2124; Prerequisite or co-requisite, MATH 3243.

Applications of the three laws of thermodynamics, partition functions and transport phenomena.

PHYS 4013 **Quantum Mechanics**

Offered: Fall odd years

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.

PHYS 4113 **Advanced Physics Laboratory**

Offered: Spring odd years

Prerequisite: PHYS 3213

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**

Offered: Fall even years

Prerequisite: PHYS 2024 or PHYS 2124

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 4951, 4952, 4953, 4954 **Undergraduate Research in Physics**

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

PHYS 4991, 4992, 4993, 4994 **Special Problems in Physics and Astronomy**

Offered: On demand

Prerequisite: 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.

POLS 2003 **American Government**

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.

Note: This course is highly recommended for all students interested in political science.

POLS 2153 **Introduction to Strategic Studies**

An introduction to strategic studies focusing on the key theoretical principles that have played a major role in shaping Western understandings of strategy, with particular focus on the United States.

POLS 2253 **Survey of Western Political Thought**

An introduction to the subfield of political theory, examining the works of major political thinkers from ancient Greece to the present.

POLS 2403 **Comparative Government**

A study of the various political systems of the world, such as the governments of Western Europe, Socialist or Communist Systems, and developing world governments. The countries under examination are often selected to address important real-world circumstances.

POLS 2413 **International Relations**

A study of the theory and practice of international politics, with special emphasis upon the state system, decision-making, policy-making, war and arms control, ideology and nationalism, the global ecological system, interdependence, multinational institutions and corporations, and human rights.

POLS 2421, 2431, 3421 **Model United Nations Workshop**

Prerequisite: POLS 3433

Participation in the state or regional Model United Nations.

Note: Only one of these courses may be taken for credit during a semester.

Note: POLS 3421 may be repeated for credit three times.

POLS 2513

Research Methods I

This course is designed as an introduction to the field of political science research. This course teaches the scientific method as applied to political science, bibliographical aids, and the study and writing of political science. It is a hands-on course where students will use the skills learned to evaluate social science research.

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 3023

Judicial Process

Cross-listed: CJ 3023

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 3024

Judicial Politics

This course examines the effect of the U.S. Supreme Court and its inferior courts on American politics, government and society, as well as the interactions and processes that determine judicial policy.

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 3063

Modern Political Thought

Cross-listed: PHIL 3063

An examination of the major contributions to political thought during the Modern Era.

Note: Completion of POLS 2253 recommended.

POLS 3083

Political Parties and Interest Groups

Prerequisite: POLS 2013

A study of American political parties and interest groups with emphasis on such topics as public opinion, the nature and history of parties and interest groups, organizational structures and procedures, public policy interest, 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 3123

American Political Behavior

A study of the individual's decision to participate in American political life and the impact those decisions have on policy formation. The course aims to understand the influences that lead to or retard individual political participation.

POLS 3133

United States Congress

Examination of the U.S. Congress in terms of its functions as both a lawmaking institution and a representative institution. Attention to the legislative process, congressional elections, party leadership, and executive-legislative relations.

POLS 3143

The United States Presidency

Analysis of the role of the presidency in the American political system. Topics include the theoretical and constitutional foundations of the president, the growth of the presidency as an institution, the evolving constitutional, political, and environmental restraints to presidential action, presidential leadership, and historical trends in the relationship between the presidency and the legislative and judicial branches of government.

POLS 3253

Classical Political Thought

Cross-listed: PHIL 3253

An examination of the major contributions to political thought during the Classical Age, the Medieval Era, and the Renaissance.

Note: Completion of POLS 2253 recommended.

POLS 3423
Problems in International Affairs

This course will examine approximately ten major issues in international affairs. It will examine the history, politics, conflicts, debates, and actors involved in each specific issue area. The specific topics are up to the instructor, and will vary from offering to offering depending on the situation and issues in international relations at the time of instruction.

POLS 3433
United Nations

Offered: 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.

Note: 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.

Note: Only one Model United Nations course may be taken for credit during a semester.

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 3513
Research Methods II

Prerequisite: POLS 2003 and POLS/HIST 2153 or PSY/SOC 2053. Completion of MATH 1113 recommended.

Introduction to elementary descriptive and inferential statistics, with an emphasis on applications in political science.

POLS 4043
American Constitutional Law

A comprehensive study of the United States Supreme Court's decisions 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; and civil liberties and civil 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.

Note: May not be taken after completion of POLS 5103 or equivalent.

POLS 4163
Formal Theory

The purpose of this course is to familiarize students with formal theory, with a focus on the assumptions of rationality, spatial and game theoretic modeling, strategic games, and institutions.

POLS 4951, 4952, 4953, 4954
Undergraduate Research in Political Science

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required.

Note: One to four credits depending on problem selected and effort made.

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 4971
Internship

Cross-listed: HIST 4971

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4972 Internship

Cross-listed: HIST 4972

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4973 Internship

Cross-listed: HIST 4973

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4974 Internship

Cross-listed: HIST 4974

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4975 Internship

Cross-listed: HIST 4975

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4976 Internship

Cross-listed: HIST 4976

Prerequisites: Junior or Senior standing, 2.75 grade point average, and consent of department head.

A supervised placement in selected agency settings in student/trainee status under professional guidance of both an agency supervisor and a faculty member. Emphasis will be on providing hands-on experience in research, editing, cultural management, public service, or some other area related to the discipline. Written report required and minimum of 100 clock hours of supervision required per credit hour.

Note: May be repeated for a maximum of 6 hours credit.

POLS 4983 Social Sciences Seminar

Cross-listed: HIST 4983

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, 4992, 4993, 4994 Special Problems in Political Science

Admission requires consent of department head.

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.

\$20 testing fee.

**PSY 2053
Statistics for the Behavioral Sciences**

Cross-listed: SOC 2053

Prerequisites: MATH 1113 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 2063
Research Design for the Behavioral Sciences**

Cross-listed: SOC 2063

Prerequisite: PSY 2003 or SOC 1003

This course is designed to introduce you to the foundations of behavioral science, the logic of research design and the many possible modes of operation. This class focuses on teaching students in the behavioral sciences the basic principles that guide the research process, the elements of research design, how to read and critique research articles, and how to write a literature review for a research project.

**PSY 2074
Experimental Psychology**

Prerequisites: PSY 2003 and PSY(SOC) 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 2093
Human Sexuality**

A survey of the psychological themes associated with human sexuality. Topics include, but are not limited to: love and intimacy, sexual behaviors, sexual problems, gender, and sexual orientation.

**PSY 2133
Cross-Cultural Psychology**

This course is designed to link basic principles in cross-cultural developmental psychology and practical everyday events and questions as above ones together to help students cultivate a global and multicultural perspective on human behavior and gain an understanding of, and appreciation for, human development as it takes place in diverse cultural settings throughout the world. Experiential learning will be an important component of this course. Each student will have a chance to observe the behavior of a child/adolescent of different ethnic background from his or her own and develop their own cross-cultural viewpoint on human development.

**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 3013
Psychosocial Aspects of Death and Dying**

Cross-listed: SOC 3013

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.

Note: This course cannot be taken for credit after completion of PSY 4003.

**PSY 3033
The Criminal Mind**

Cross-listed: CJ 3033

Prerequisite: PSY 2003 and CJ(SOC) 2003 or CJ(SOC) 2043

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 3053
Physiological Psychology

Prerequisites: PSY 2003, BIOL 2124, 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 3083
Psychology of Women

The purpose of this course is to examine the lives of girls and women, including topics such as gender stereotypes, the development of gender roles, gender comparisons, women and work, love relationships, women's physical and mental health, violence against women, and women in later adulthood. Students who take this course should acquire an understanding of what it means to be female in North America.

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 3133
Self and Society

Cross-listed: SOC 3133

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.

PSY 3141, 3142, 3143, 3144
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.

Note: 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 3173
Psychology of Consciousness

Prerequisite: Upper division standing.

An introduction to the various theoretical viewpoints as to the topic of consciousness and how it is investigated.

PSY 3184
Animal Behavior

Cross-listed: BIOL 3184

Offered: Spring of even years

Prerequisite: sophomore standing in biology or psychology, or approval of instructor.

An introductory course in animal behavior covering behavioral responses in primitive and advanced animals exposed to a wide range of environmental and social conditions. Laboratory exercises will include field as well as in-lab exercises and will focus on observational techniques and analyses of behavioral patterns in vertebrates and invertebrates.

Lecture three hours, laboratory two hours. \$20 laboratory fee.

PSY 3813 Lifespan Development

Prerequisites: NURS major, PSY major with 90 earned hours, or instructor permission.

A study of the processes of human development from conception through the lifespan. Research, application, and other considerations for Nursing majors will be emphasized. Topics include, but are not limited to: how the maturation process affects an individual's physical and psychological state, genetic influences, child cognitive processes, moral reasoning, and early, middle, and late adulthood biological, psychosocial, and cognitive developmental processes.

PSY 4003 Advanced Research Method and Lab for Psychology

Prerequisites: PSY 2003, 2053, and 2063

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.

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 and PSY(SOC) 2053.

Theory of psychological testing, statistical procedures, and training in administration, scoring and profiling of various tests of ability, achievement, interests, and personality.

\$20 testing fee.

PSY 4043 Social Psychology

Cross-listed: SOC 4043

Prerequisite: 9 hours of Sociology 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 4073 Cognitive Psychology

Prerequisite: 60 hours including 9 hours of psychology or permission of instructor.

A study of the basic principles of mental processes, and their influence on behavior. Specifically, the course focuses on the conscious and unconscious processes involved in the acquisition, storage, transformation, and use of knowledge.

PSY 4133 Psychopharmacology

Prerequisites: PSY 2003, 2053, or permission of instructor.

An introduction to the field of psychopharmacology. Representative topics include (but are not limited to) neuronal structures and processes, neurochemicals and neurotransmission, and the biological basis and pharmacological treatment of neurodegenerative diseases and mental illness.

PSY 4234 Field Placement

Prerequisites: PSY 2023 or 3093, and PSY(SOC) 2053 and PSY 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.

Note: The purchase of professional liability insurance is required.

PSY 4951, 4952, 4953, 4954
Undergraduate Research in Psychology

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

PSY 4991, 4992, 4993, 4994
Special Problems in Psychology

Prerequisites: Eighteen hours of psychology and prior permission of instructor.

Independent work under individual guidance of a faculty member.

PTA 1121
CLINICAL KINESIOLOGY LAB

Co-requisite: PTA 1122.

Lab skills practice to apply concepts presented in PTA 1122.

Laboratory: 1 hour.

PTA 1122
CLINICAL KINESIOLOGY

Course credit: 2 hours. Co-requisite: PTA 1121. This course provides an introduction to the musculoskeletal anatomy, human movement, and clinical assessment. Students will learn to locate and identify muscles, joints, and boney landmarks of the spine and extremities. Students will also learn to assess range of motion and muscle strength.

PTA 1132
PATHOLOGICAL CONDITIONS

Course credit: 2 hours lecture. This course will examine the mechanisms and concepts of selected pathological conditions in the human body. Emphasis is placed on how the specific pathological condition affects the functioning of the system involved, as well as its impact on other body systems. This course includes general pathology with emphasis on the study of diseases and disorders commonly seen in physical therapy practice.

PTA 1231
THERAPEUTIC PROCEDURES I LAB

Course credit: 1 hour laboratory. Co-requisite: PTA 1232. Lab skills practice to apply concepts presented in PTA 1232.

PTA 1232
THERAPEUTIC PROCEDURES I

Course credit: 2 hours lecture. Co-requisite: PTA 1231. Students will learn physical therapy interventions using specific physical agents.

PTA 1241
PRINCIPLES OF PHYSICAL THERAPY LAB

Co-requisite: PTA 1243

This lab will cover concepts and techniques presented in PTA 1243 Principles of Physical Therapy.

Course credit: 1 hour laboratory.

PTA 1243
PRINCIPLES OF PHYSICAL THERAPY

This course provides an introduction and orientation to the field of physical therapy. This course will introduce students to the theory, principles, and techniques of patient care. Students will be introduced to concepts of professional ethics and conduct in the delivery of patient care.

Course credit: 3 hours lecture

PTA 1251
DATA COLLECTION IN PHYSICAL THERAPY LAB

This lab will cover data collection and compilation as it relates to Physical Therapy.

Course credit: 1 hour laboratory.

PTA 2112
THERAPEUTIC PROCEDURES II LAB

Co-requisite: PTA 2113.

Lab skills practice to apply concepts presented in PTA 2113.

PTA 2113
THERAPEUTIC PROCEDURES II

Co-requisite: PTA 2112.

This course is a continuation of physical therapy interventions using specific physical agents.

Course credit: 2 hours lecture.

PTA 2121
NEUROLOGICAL DEVELOPMENT AND MOTOR CONTROL

This course will examine the principles of normal motor development across the lifespan from infancy to adulthood.

**PTA 2142
THERAPEUTIC EXERCISE AND CARDIOPULMONARY REHABILITATION LAB**

Co-requisite: PTA 2143.
Lab skills practice to apply to concepts presented in PTA 2143.

**PTA 2143
THERAPEUTIC EXERCISE AND CARDIOPULMONARY REHABILITATION**

Co-requisite: PTA 2142
This course will examine the theory and application of physical therapy procedures for the management of patients with cardiovascular and pulmonary conditions. This course will also examine the theory and application of therapeutic exercise.

**PTA 2151
ADMINISTRATIVE PROCEDURES**

This course will examine the administrative aspects of providing physical therapy services including reimbursement, quality improvement, laws and professional liability regarding the delivery of physical therapy services, administrative principles, and organizational patterns.
Course credit: 1 hour lecture.

**PTA 2164
CLINICAL EXPERIENCE I**

This course is the first clinical experience in the PTA program curriculum. Students will perform 200 hours of clinical practice in a physical therapy setting while under the supervision of a licensed physical therapist and/or licensed physical therapist assistant. Students will apply the knowledge and skills acquired from previous didactic learning as deemed appropriate by the clinical instructor.

**PTA 2211
MUSCULOSKELETAL REHABILITATION LAB**

Co-requisite(s): PTA 2212
Lab skills practice to apply concepts presented in PTA 2212.

**PTA 2212
MUSCULOSKELETAL REHABILITATION**

Co-requisite(s): PTA 2211
This course will examine the theory and application of physical therapy interventions for the management of patients with specific musculoskeletal conditions. A review of basic assessment and treatment procedures will be included.

**PTA 2221
NEUROLOGICAL REHABILITATION LAB**

Lab skills practice to apply concepts presented in PTA 2222.

**PTA 2222
NEUROLOGICAL REHABILITATION**

Co-Requisite(s): PTA 2221
This course will examine the theory and application of physical therapy interventions for the management of specific neurological disorders. A review of basic assessment and treatment procedures will be included.

**PTA 2234
CLINICAL EXPERIENCE II**

Pre-requisite: PTA 2164
This course is the second clinical experience in the PTA program curriculum. Students will perform 200 hours of clinical practice in a physical therapy setting while under the supervision of a licensed physical therapist and/or licensed physical therapist assistant. Students will apply the knowledge and skills acquired from previous didactic learning as deemed appropriate by the clinical instructor.

**PTA 2235
CLINICAL EXPERIENCE III**

Pre-requisite: PTA 2234
This course is the third clinical experience in the PTA program curriculum. Students will perform 240 hours of clinical practice in a physical therapy setting while under the supervision of a licensed physical therapist and/or licensed physical therapist assistant. Students will apply the knowledge and skills acquired from previous didactic learning as deemed appropriate by the clinical instructor.

**PTA 2991, 2992, 2993, 2994, 2995, 2996
SPECIAL TOPICS FOR PHYSICAL THERAPY ASSISTANT**

This course is designed to introduce students to specific areas in Physical Therapist Assistant. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

**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.

Note: 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.

Note: 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.

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 2003
Introduction to Criminal Justice

Cross-listed: CJ 2003

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 2033
Social Problems

Cross-listed: CJ 2033

Prerequisite: SOC 1003

A sociological analysis of contemporary social problems including inequalities, deviance, population changes, and troubled institutions.

SOC 2043
Crime and Delinquency

Cross-listed: SOC 2043

Prerequisite: SOC 1003 or SOC(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 2053
Statistics for the Behavioral Sciences

Cross-listed: PSY 2053

Prerequisites: MATH 1113 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 2063
Research Design for the Behavioral Sciences

Cross-listed: PSY 2063

Prerequisite: SOC 1003 or PSY 2003.

This course is designed to introduce you to the foundations of behavioral science, the logic of research design and the many possible modes of operation. This class focuses on teaching students in the behavioral sciences the basic principles that guide the research process, the elements of research design, how to read and critique research articles, and how to write a literature review for a research project.

SOC 2073
History of Social Thought

A study of the historical development of social thought.

Note: May not be taken for credit after completion of SOC 4023, PHIL 4053, or equivalent.

SOC 2083
Sociological Theory

A survey course of sociological theories and theory development from the classical period to post-modernism.

SOC 3013
Psychosocial Aspects of Death and Dying

Cross-listed: PSY 3013

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.

Note: 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 3033

Environment and Society

Prerequisite: SOC 1003

This course focuses on the study of interrelationships between society and the natural environment from traditional to postindustrial forms. Topics in this class will include economic approaches to the natural environment, philosophical/ethical approaches to the natural environment, public opinion on the natural environment, the importance of the environmental movement and policy development on environmental issues.

SOC 3063 Communities

Prerequisite: SOC 1003

An exploration and analysis of the sociological concept of community from classical approaches to recent debates.

Note: May not be taken for credit after completion of SOC 2063.

SOC 3083 Social Deviance

Cross-listed: CJ 3083

Prerequisite: SOC 1003 or SOC(CJ) 2003

An introduction to the sociological and criminological study of human deviance. Various theories of deviance will be examined and applied to real life examples.

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 3103 The Juvenile Justice System

Cross-listed: CJ 3103

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 3133 Self and Society

Cross-listed: PSY 3133

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 3153 Prison and Corrections

Cross-listed: CJ 3153

Prerequisites: SOC 1003 and SOC(CJ) 2033

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

Prerequisites: SOC 1003 and SOC(PSY) 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 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 4013
Drugs in Society

Prerequisite: SOC 1003 or CJ 2003

This course presents a comprehensive study of the history and prohibition of drug use in the United States, as well as the effects of drugs on society in the form of crime, prison and treatment. The main focus of this class is on the history of drug use, how certain drugs become illegal, and the intended and unintended consequences of drug prohibition for communities and society.

SOC 4023
Sociology of Gender

Prerequisite: SOC 1003

This course addresses definitions of gender, gendered identities, how gender is created and maintained as a social construct, and the importance of gender in our daily lives. This class mainly focuses on the theoretical and empirical literature that encourages critical thinking about gender and challenges students to move beyond their preconceived notions/assumptions about gender.

SOC 4043
Social Psychology

Cross-listed: PSY 4043

Prerequisite: Upper division standing 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.

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 4073
Sociology of Religion

Prerequisite: SOC 1003.

A study of the various theoretical explanations of religion, including its relationship to the larger society and the world system.

SOC 4141, 4142, 4143, 4144
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.

Note: May be repeated for credit if course content differs.

SOC 4206
The Law in Action

Cross-listed: CJ 4206

Offered: Summer only

Prerequisites: SOC/CJ 2043, 9 hours of Criminal Justice coursework, senior classification, and instructor permission.

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.

SOC 4283
Sociology Capstone

Prerequisites: All required sociology courses (lower and upper division) and 9 hours of upper division electives in sociology, or consent of instructor.

This course must be completed by all sociology majors prior to graduation. The course content/topic is determined by the professor and current issues in the local community, which may vary semester to semester. Emphasis will be placed on linking theory, research methods, and social action to community defined problems in the form of applied sociology.

SOC 4951, 4952, 4953, 4954
Undergraduate Research in Sociology

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

SOC 4991, 4992, 4993, 4994
Special Problems in Sociology

Prerequisite: Prior approval by instructor

Content will be determined by specific curriculum review and student need.

TH 2203
Play Analysis

A course designed for the theatre major. Contains techniques and vocabulary essential for doing a production-based analysis for the student actor, designer or director.

TH 2273
Introduction to Theatre

Prerequisite: ENGL 1013 or equivalent.

A study of theatre as an art form with particular attention to scenic, dramatic, literary and historic elements.

Note: TH 2273 may be used to fulfill the fine arts general education requirement.

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.

Note: 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.

Note: This course counts as a PE activity credit in degree programs that are not intended for teacher licensure.

TH 2511, 2521
Practicum in Set Construction and Lighting

Credit will be given for forty hours of participation in these elements of stagecraft.

TH 2513
Introduction to Theatrical Design and Production

An introduction to the field of technical theatre.

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
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 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 3513
Stagecraft Techniques

An introductory course for both majors and non majors who want to learn the technical aspects of dramatic productions. A study of construction fundamentals and skills involved in scenic art. This course also introduces the student to the production process, theatre job descriptions, professional hierarchy, and technical specialist collaboration.

This course requires a weekly lab in addition to the class for supervised practice of class skills.

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 theory and creative process. This course requires a weekly lab in addition to the class for supervised practice of class skills and familiarization with the production process.

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 3711, 3721, 4711, 4721
Practicum in Stage Management

Prerequisite: Consent of Instructor

Student will be given credit for stage-managing a full-length production or a slate of one-acts.

Note: Each number may be taken for credit one time with a maximum of 7 practicum credits counted toward the major.

TH 3731, 3741, 4731, 4741
Practicum in Acting

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 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 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 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 4283
Children's Theatre: Techniques and Practicum

Prerequisites: Consent of instructor

The philosophy of teaching acting to children, in theory and in practice. The course is designed for theatre 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.

Note: May not be taken for credit after completion of SPH 5283 or equivalent.

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.

Note: 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.

Note: May not be repeated for credit as TH 5323.

TH 4503
Scene Design

Prerequisite: 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.

Note: 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.

Note: May not be repeated for credit as TH 5506 or equivalent.

TH 4511, 4521
Practicum in Set Construction and Lighting

Prerequisite: Consent of Instructor

Student will be given credit for 40 hours of set construction participation.

TH 4513
Drafting for the Stage

Prerequisite: TH 3513 or permission of the Instructor.

Introduction to the United States Institute for Technical Theatre drafting techniques and language. Production of floor plans, elevations, construction drawings and perspectives for theatrical construction.

This course requires a weekly lab in addition to the class skills and familiarization with the production process.

TH 4523
Advanced Stagecraft

Prerequisites: TH 3513, TH 4513 or permission of instructor.

A course for technical theatre emphasis majors that trains the student for managing a theatre shop. Teaches advanced construction techniques, welding, pyrotechnics, and people managing skills.

This course requires a weekly lab in addition to the class for supervised practice of class skills and production process.

TH 4543
Senior Project in Design

Portfolio creation project approved by the department to facilitate graduate school application process or professional placement.

TH 4611, 4621
Practicum in Costume and Makeup

Prerequisite: Consent of Instructor

Student will be given credit for 40 hours in costume or makeup participation.

Note: Each course number may only be taken for credit 1 time with a maximum of 7 practicum hours counting toward the major.

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 4821, 4831
Practicum in Directing

Prerequisite: Consent of Instructor

Student will be given credit for the assistance in the directing of a full-length production or for the independent directing of a one-act.

TH 4843
Senior Project in Theatrical Performance

Portfolio creation project approved by the department to facilitate graduate school application or professional placement.

TH 4951, 4952, 4953, 4954
Undergraduate Research in Theatre

Offered: On demand

Prerequisite: Departmental approval

Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

TH 4983
Undergraduate Research in Theatre

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.

Note: May not be repeated for credit as TH 5983 unless topic is different.

TH 4991, 4992, 4993, 4994
Special Problems in Theatre

For majors only. Students are accepted by invitation of the instructor.

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.

VIN 1113
INTRODUCTION TO VITICULTURE AND VINEYARD ESTABLISHMENT

This course is designed to introduce students to viticulture in general and to current practices for establishing a commercial vineyard. Topics covered include varietal selection, site preparation, equipment, site selection, first season establishment, vine growth development and training, trellis systems, weed control, vine disease control, and pruning for training purposes. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course.

VIN 1132
WINTER VITICULTURE AND VINEYARD ESTABLISHMENT

Pre-requisite: VIN 1113

This course is designed to provide students initiated in the field of viticulture practical experience in winter vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture.

VIN 1142
SPRING VITICULTURE TECHNOLOGY

Pre-requisite: VIN 1113

This course is designed to provide students initiated in the field of viticulture personal experience in spring vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture.

VIN 1152
SUMMER/FALL VITICULTURE TECHNOLOGY

Pre-requisite: VIN 1113, VIN 1132 recommended

This course is designed to provide students initiated in the field of viticulture personal experience in spring vineyard operations. Students are required to partner with an approved vineyard to participate in the required field experience portion of the course which will serve as work experience for those seeking employment in commercial viticulture.

VIN 1463
INTRODUCTION TO ENOLOGY

This is an introductory course in the basic science and technology of winemaking. It is intended for the entrepreneur exploring business opportunities in the grape wine industry, and/or the prospective small winery employee interested in career development. The home winemaker that has never undergone any formal training on the subject may also benefit from this basic course. Students will make wine at home from a kit, track fermentation, make various chemical measurements and provide one bottle of finished wine to the instructor for evaluation at the conclusion of the course.

VIN 1483
WINERY SANITATION

Prerequisite: VIN 1463 (recommended) or permission.

This is a course in the basic science and technology of winery sanitation. The course serves as an introduction to wine microbiology and covers all methods used for winery sanitation including premises, tanks, pumps, filters, oak barrels and sampling equipment, including but not limited to chemical agents, reagents, and thermal treatments leading to sterile bottling. Environmental issues and compliance are also addressed.

VIN 1593
GRAPE VARIETIES/MID AMERICA

This course is designed to introduce students to the grape varieties best suited to the Mid-American region with an emphasis on the Arkansas grape growing region. Students will benefit from in-depth analysis of the regional factors which contribute to Midwest grape production.

VIN 1602 WINERY EQUIPMENT OPERATIONS

Prerequisite: VIN 1463 (recommended) or permission.

This course covers process technologies and process systems that are used in modern commercial wineries. This course will include lectures, demonstrations and a two-day workshop. Overview of winemaking systems including winemaking operations and equipment, barrel aging and barrel management, membrane separation processes, specialized contacting systems, cleaning and sanitation systems, process control systems, refrigeration systems, air conditioning and humidity systems, electrical systems, waste water systems, solid waste handling, and workplace safety.

VIN 2103 INTRODUCTION TO WINE MICROORGANISMS

This course is an introduction to the variety of microorganisms frequently encountered in the wine making process both beneficial and harmful. Topics include identification, physiology, morphology and biochemistry of various wine microorganisms.

VIN 2112 INTEGRATED PEST MANAGEMENT

Effective grape production depends on the grower developing a system of grape management that is appropriate for each vineyard. Decisions need to be made for how to manage all of the normal cultural practices such as planting, fertility, harvesting, and pruning as well as managing the insect, disease, and weed problems that occur either regularly or sporadically. The information in this course will address management issues related to common, expected pest problems as well as the occasional appearance of minor pest problems.

VIN 2132 MIDWEST VINEYARD MANAGEMENT

Pre-requisite: VIN 1113 and VIN 1132

This course is a study of commercial grape growing in the Midwest of the United States. Topics include cultivars, vine nutrition, irrigation, canopy management, pests, maturity sampling and harvest, balanced pruning/cropping and cold injury.

VIN 2363 GRAPE VARIETIES OF MID AMERICA (ARKANSAS GRAPES)

Pre-requisite: VIN 1113

This course is designed to introduce students to the grape varieties best suited to the Mid American region with an emphasis on the Arkansas grape growing region. Students will benefit from in depth analysis of the regional factors which contribute to Midwest grape production.

VIN 2463 INTERMEDIATE ENOLOGY

Prerequisite: VIN 1463 or permission.

This course in the science and technology of wine making is intended for the experienced intermediate wine maker, the winery employee interested in career development, or the advanced home wine maker that is seeking new challenges. Basic organic chemistry, microbiology, and some mathematics familiarity are recommended.

VIN 2573 FALL WINE PRODUCTION INTERNSHIP

Prerequisites: VIN 1463, VIN 1483, VIN 1602, and VIN 2463 or permission.

This course is designed for the individual anticipating a career in the wine industry. This course (internship) is designed to provide a student who has completed major course sequences with an intense level of practical and realistic winery operation experiences, sufficient to equip him or her with sufficient skills and work experience for an entry-level position in the wine industry. Students involved in this program will participate in a full time Crush Season internship at a supporting winery, and are expected to use the time and opportunities to further their understanding of the wine making process and common winery operations.

VIN 2592 CELLAR OPERATION TECHNOLOGY

Prerequisite: VIN 2573 or permission.

This course is designed to provide student initiated in the field of enology with actual and practical exposure to the technology of wine making as is performed during the passive vineyard periods associated with winter. The student is expected to improve his or her understanding of the methods and science involved by on-site participation in each of the various activities associated with finished wine production. The course is designed to serve as actual practical exposure and may qualify as experience for those seeking employment in commercial enology.

VIN 2663 SENSORY EVALUATION

Prerequisite: VIN 1463 or permission.

This is a course intended for those individuals who need to develop an understanding of the principles of sensory evaluation used in commercial wine making. It will also be of benefit to the wine enthusiast who is interested in reaching advanced levels of appreciation as well as to the producer, the wine merchant, and ultimately the enologist, who by the nature of their profession need to discern flavors and establish tasting benchmarks. Students will utilize sensor kits and workshops to further their sensory evaluation skills and techniques.

VIN 2683 WINE AND MUST ANALYSIS

Prerequisites: VIN 1463 and CHEM 1114 or permission.

Principals of grape juice and wine analysis and the reasons for use of each analysis. Analyses of a practical and useful nature are chosen for the laboratory exercises demonstrating various chemical, physical and biochemical methods. Students will participate in workshops and hands-on experiences at participating wineries.

VIN 2933 SOILS FOR VITICULTURE

The course will explore soil properties and behavior and their influence on wines. The course focuses not only on growth and production, but on the long-term effects of

viticulture on soil quality and the wider environment.

WLD 1103 INTRODUCTION TO THERMAL CUTTING

Students will learn the principles and procedures for oxyfuel cutting, plasma cutting, and carbon arc gouging. Safe shop practices will be emphasized.

WLD 1202 BLUEPRINT READING

Students will learn to read and interpret various kinds of blueprints and working drawings. AWS welding symbols and their meanings will be taught.

WLD 1212 INDUSTRIAL SAFETY IN WELDING

The study of safe and industry accepted practices and equipment necessary for the safe use of all existing manual methods of welding. Student will learn to identify common industrial and occupational hazards and means to avoid accidents.

WLD 1224 INTRODUCTION TO ARC WELDING

This course is intended to teach theory and application of basic Astick@ welding (SMAW). It will cover safety, correct selection of electrodes, practicing beds and the application of correct welds on actual structures.

WLD 1302 METALLURGY

An elementary and practical approach to the structure, marking classifications, machinability and identification of metals and their properties. This will require the use of various manufacturer catalogs, bulletins and charts. Basic heat treatment and how metals are affected will be discussed.

WLD 1403 WELDING FOR TRADE AND INDUSTRY

This course is intended to teach theory and application of welding for trades and industry. This course will be specific to the needs and applicable to each area of interest. It will cover basic welding safety, correct cutting torch handling, basic gas metal arc welding (MIG), gas tungston arc welding (TIG), and shielded metal arc welding. Specific applications will be deemed by the appropriate advisor.

WLD 1405 POSITION WELDING

Pre-requisite: WLD 1224 or permission of instructor. A continuation of the study of Arc welding concentrating on more advanced weld positions and varied electrodes. This course will also discuss hardfacing, padding, and the techniques for welding pipe.

WLD 1503 GAS METAL ARC (MIG) WELDING

Pre-requisite: WLD 1405 or permission of instructor. Provides student with theory and application of wire feed processes also known as MIG Welding or semi-automatic and automatic processes. The student also gains an understanding of the basic gases and mixtures used for different materials.

WLD 1603 GAS TUNGSTEN ARC (TIG) WELDING

Pre-requisite: WLD 1405 or permission of instructor. Study of Gas Tungsten Arc (TIG) Welding commonly referred to as TIG or Heliarc. This course will focus on shielding gases, equipment and feasible use situations. Safety will be addressed and demonstrated in a lab experience.

WLD 1702 WELDMENT TESTING

Covers different types of testing such as destructive and nondestructive. Students will study guided bend, radiographic, ultrasonic, magnetic particle and dye penetrant tests, and take practical tests that are designed according to AWS D1.1 and ASME Section IX industry standard codes.

WLD 1804 CERTIFICATION WELDING I

Student practices with projects that are designed according to AWS D1.1 and ASME Section IX industry standard codes. The implementation and approval of the codes in accordance with AWS D1.1 and ASME section IX will be addressed. Documentation of procedure will also be covered.

WLD 2804 CERTIFICATION WELDING II

This is a continuation of WLD 1804. Student practices and takes practical tests that are designed according to AWS D1.1 and ASME Section IX industry standard codes. The implementation and approval of the codes in accordance with these standards will be addressed. Documentation of procedure will also be covered. Students in this class will have more emphasis in pipe certification.

WLD 2991 SPECIALTOPICS IN WELDING

This course is designed to introduce students to specific areas in Welding Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

WLD 2992, 2993, 2995, 2996 SPECIAL TOPICS IN WELDING

This course is designed to introduce students to specific areas in Welding Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit

hour.

WLD 2994
SPECIAL TOPICS FOR WELDING

This course is designed to introduce students to specific areas in Welding Technology. Course content and credit are designed to meet the needs of the student. The topic will vary from offering to offering; thus, the course may be taken more than once for a total of 6 hours. This course requires 15 clock hours per one semester credit hour.

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Adult Education

Program Coordinator

This program is designed to meet the needs of the adult learner who does not possess a high school diploma or would like to improve basic skills in computer, math, English, or literacy.

Mission Statement

Arkansas Tech University – Ozark Campus Adult Education is committed to motivating and encouraging our students to continue their education and to function as a competent member of society.

General Information

The Arkansas Tech University – Ozark Campus Adult Education is fully approved and funded by Arkansas Career Education and the Adult Education Section.

Program Options

Adult Education is available to those students who require the Arkansas High School Diploma or who require training or retraining for employment.

Basic Skills Enhancement provides a review of academic areas for the high school graduate in need of upgrading skills to enter higher education, military, or the workforce.

English as a Second Language (ESL) allows adults to learn to speak, read, and write English as their second language.

Workplace classes may be arranged with local businesses or industries to upgrade employees' basic skills needed on the job. Contact 479.667.3520 for more information.

Locations

Booneville Adult Education Center
2932 State Hwy 10 East
Booneville, AR 72927
479-675-4326
Instructor: Christy McCollough

Ozark Adult Education Center
1700 Helberg Lane
Ozark, AR 72949
479-667-3520
Instructor: Vicky Williams

Paris Adult Education Center
103 East Pine Street
Paris, AR 72855
479-963-6962
Instructor: Judith Davis

Air Conditioning and Refrigeration

**Program Chair
Kenneth Beeler
Air Conditioning
Bldg
(479) 508-3333
kbeeler@atu.edu**

The air conditioning and refrigeration industry offers a bright future for people who wish to prepare for entry into this profession. This field includes sales, installation, maintenance, service and operation of equipment not only in residential settings, but also in commerce and industry. The need for air conditioning and refrigeration service technicians will continue to expand with the growth of computer applications into the industrial fields. This program also places emphasis on Green Technology initiatives and incorporates an emphasis on PV arrays and wind turbines.

Arkansas Tech University-Ozark Campus offers a technical certificate in air conditioning and refrigeration (36 hours) and an associate of applied science in general technology with an option in air conditioning and refrigeration (60 hours) in a completely equipped shop. Students are required to take the EPA Certification Test. Industry competency exams such as The NATE exam and the HVAC excellence exams are available to the student prior to graduation.

The Facilities Maintenance/Management program offers training in addition to the Air Conditioning and Refrigeration course work to enable graduates to pursue broader employment opportunities. Course work prepares students for careers in facilities and grounds maintenance fields. Students pursuing the Associate of Applied Science degree will be better prepared to pursue positions that will lead to promotion and management positions in the facilities and grounds maintenance fields.

**Air Conditioning
and
Refrigeration**

Curriculum in Air Conditioning/Refrigeration Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
ACR 1203	Fundamentals of Electricity	3
ACR 1205	Tubing and Piping	5
ACR 1301	Industrial Safety in Air Conditioning and Refrigeration	1
ACR 1302	Basic Compression and Refrigeration	2
BUS 1003 ENGL 0303 ENGL 1013	Business English or Foundational Composition or Composition I	3
BUS 1023 MATH 0803	Business Mathematics or Beginning Algebra (or higher math)	3
	Total	17
Spring		
ACR 1222	Industrial Controls	2
ACR 1503	Electronic Components	3
ACR 1602	Schematics	2
ACR 2102	Residential Systems	2
ACR 2104	Heat Gain and Loss	4
	Total	13
1st Summer		
ACR 2112	Air Conditioning Service	2
ACR 2904	Internship (or approved elective)	4
	Total	6

Curriculum in Air Conditioning/Refrigeration Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
1st Semester		
ACR 1203	Fundamentals of Electricity	3
ACR 1205	Tubing and Piping	5
ACR 1301	Industrial Safety in Air Conditioning and Refrigeration	1
ACR 1302	Basic Compression and Refrigeration	2
ENGL 1013	Composition I	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	17
2nd Semester		
ACR 1222	Industrial Controls	2
ACR 1503	Electronic Components	3
ACR 1602	Schematics	2
ACR 2102	Residential Systems	2
ACR 2104	Heat Gain and Loss	4
ENGL 1023	Composition II	3
	Total	16
3rd Semester		
	Any Approved Social Science ¹	3
ACR 2112	Air Conditioning Service*	2
ACR 2134	Boiler Operations	4
COMS 1003	Introduction to Computer Based Systems or	3
COMS 2003	Microcomputer Application or	
BUS 1303	Introduction to Computers	
	Total	12
4th Semester		
ACR 2114	Industrial Refrigeration	4
ACR 2124	Sheet Metal	4
ACR 2904	Internship (or approved elective)*	4
WLD 1403	Welding for Trades and Industry	3
	Totals	15
	¹ See appropriate alternatives or substitutions in "General Education Requirements". *Usually offered Summer I term	

**Facilities
Maintenance Option**

Curriculum in Air Conditioning/Refrigeration Facilities Maintenance Option Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
ACR 1203	Fundamentals of Electricity	3
ACR 1205	Tubing and Piping	5
ACR 1301	Industrial Safety in Air Conditioning and Refrigeration	1
ACR 1302	Basic Compression and Refrigeration	2
BUS 1003	Business English or	3
ENGL 0303	Foundational Composition or	
ENGL 1013	Composition I	
WLD 1302	Metallurgy	2
	Total	16
Spring		
ACR 1222	Industrial Controls	2
ACR 1503	Electronic Components	3
ACR 1602	Schematics	2
BUS 1023	Business Mathematics or	3
MATH 0803	Beginning Algebra (or higher math)	
FAC 2202	Carpentry (or approved elective)	2
FAC 2212	Plumbing (or approved elective)	2
	Total	14
1st Summer		
ELT 2123	Industrial Fluid Power	3
FAC 2203	Facilities Analysis and Troubleshooting (or approved elective)	3
	Total	6
	(Suggested approved electives include: AST 1004, BUS 1073, CRT 1124, ICS 1104, and ICS 1303)	

**Facilities
Management Option**

**Curriculum in Air Conditionin/Refrigeration Facilities Management Option Associate of Applied
Science Degree in General Technology**

Course Number	Course Name	Semester Hours
1st Semester		
ACR 1203	Fundamentals of Electricity	3
ACR 1205	Tubing and Piping	5
ACR 1301	Industrial Safety in Air Conditioning and Refrigeration	1
ACR 1302	Basic Compression and Refrigeration	2
ENGL 1013	Composition I	3
WLD 1302	Metallurgy	2
	Total	16
2nd Semester		
ACR 1222	Industrial Controls	2
ACR 1503	Electronic Components	3
ACR 1602	Schematics	2
FAC 2202	Carpentry (or approved electives)	2
FAC 2212	Plumbing (or approved electives)	2
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	14
3rd Semester		
ACR 2134	Boiler Operations	4
ELT 2115	or Programmable Controllers	5
BUS 2143	Introduction to Management	3
COMS 1003	Introduction to Computer Based Systems	3
COMS 2003	or Microcomputer Applications	
BUS 1303	or Introduction to Computers	
ELT 2123	Industrial Fluid Power	3
FAC 2203	Facilities Analysis and Troubleshooting (or approved electives)	3
	Total	16 or 17
4th Semester		
	Any Approved Social Science ¹	3
ACR 2904	Internship*	4
ENGL 1023	Composition II	3
FAC 2222	Grounds Maintenance (or approved electives)	2
WLD 1403	Welding for Trades and Industry	3
	Total	15
	*See appropriate alternatives or substitutions in "General Education Requirements". (Suggested approved electives include: AST 1004, BUS 1073, CRT 1124, ICS 1104, and ICS 1303)	
	*Usually offered in Summer I term	

Automotive Service Technology

Program Chair
Bobby Sewell
Shop Complex
(479) 508-3311
bswell@atu.edu

Instructor
Brian Bass

The field of automotive service and repair has become so specialized and technical that the demand for trained technicians increases daily. The Automotive Service Technology program currently holds a certification from the National Automotive Technicians Education Foundation (NATEF), and offers courses in all eight certification areas.

Each student will be required to purchase a tool kit approved by the instructor. Students will be asked to take the NOCTI exam before graduation.

**Automotive
 Service
 Technology**

Curriculum in Automotive Service Technology Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
AST 1003	Automotive Electronics	3
AST 1004	Gasoline Engine Theory	4
AST 1103	Automotive Brake Systems	3
AST 1113	Introduction to Automotive Drive Trains	3
BUS 1003 ENGL 0303 ENGL 1013	Business English or Foundational Composition or Composition I	3
	Total	16
Spring		
AST 1005	Engine Performance	5
AST 1213	Automotive Chassis and Steering	3
AST 2103	Advanced Automotive Electronics	3
BUS 1023 MATH 0803	Business Mathematics or Beginning Algebra (or higher math)	3
	Total	14
Summer I		
AST 1203	Automotive Climate Control	3
AST 2203	Diesel Theory	3
	Total	6

Curriculum in Automotive Service Technology Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
Fall		
AST 1003	Automotive Electronics	3
AST 1004	Gasoline Engine Theory	4
AST 1103	Automotive Brake Systems	3
AST 1113	Introduction to Automotive Drive Trains	3
ENGL 1013	Composition I	3
	Total	16
Spring		
AST 1005	Engine Performance	5
AST 1213	Automotive Chassis and Steering	3
AST 2103	Advanced Automotive Electronics	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	14
Summer I		
AST 1203	Automotive Climate Control	3
AST 2203	Diesel Theory	3
	Total	6
Fall		
AST 1223	Advanced Automotive Drive Trains	3
AST 2113	Advanced Engine Performance	3
ENGL 1023	Composition II	3
WLD 1403	Welding for Trades & Industry	3
	Total	12
Spring		
	Any Approved Social Science	3
AST 2903	Internship (or approved elective)	3
AST 2993	Special Topics	3
COMS 1003	Introduction to Computer Based Systems	3
	or	
COMS 2003	Microcomputer Applications	
BUS 1303	Introduction to Computers	
	Total	12

Business and Industry

**Program
Coordinator
Ken Warden**

Business and Industry Training

The Business and Industry Training Program strives to meet the needs of the service community by providing instruction appropriate to the needs of area businesses. Training programs are customized to the requests of the specific business. Assistance establishing appropriate instruction opportunities for individuals and groups as well as assistance securing training grant funds is available.

Mission

Arkansas Tech University - Ozark Campus' Business and Industry Program works to create a professional effective workforce by meeting the customized training needs of the community and assisting in regional economic development efforts.

Non-credit Instruction

Instruction is customized to the needs of a specific business. Examples of some of the non-credit courses offered include:

Communication

Conflict Resolution
Motivating Employees
Problem Solving
Running Effective Meetings

Computer Skills

Microsoft Excel
Microsoft Word
Microsoft Powerpoint
Microsoft Windows

Leadership and Strategy

Diversity
Sales and Marketing Optimization
Strategy Development
Team Building
Time Management

Manufacturing

Lean Manufacturing/Lean Office
Quality Systems (ISO, etc)
Six Sigma, Lean Six Sigma

Miscellaneous

Conversational Spanish
Environmental, Health and Safety (OSHA, ROHS-WEE, etc.)
Finance and Accounting

Paramedic/EMS

Advanced Cardiac Life Support
Basic Life Support CPR Classes
Basic and Advanced EMS Training Refresher
Basic and Advanced Prehospital Trauma Life Support
Pediatric Advanced Life Support

Technical Skills

Welding
Industrial Controls
Hydraulics, Pneumatics
Maintenance (mechanical or electrical)

Business Technology

Program Chair
Debra Wofford
Collegiate Center
(479) 508-3331
dwofford@atu.edu

Instructors
Tekla Barr
Clinton Hall
Serelda Johnson
Charles Lee
Angela Medlock

The Business Technology program is designed to prepare students for careers as an administrative assistant, accounting clerk, computer operator, or office manager. Students will gain the technical and computer knowledge for meeting the necessary skills to attain positions in their chosen field. Given the necessary time on the job to build expertise and accumulate experience, students can take advantage of opportunities to advance. Students can choose from one of the three programs of study: Business Technology, Banking, or Medical Transcription. Comprehensive computer classes and their applications prepare students for the MOS (Microsoft Office Specialist) certification

The Business Technology Banking program of study will prepare students for careers in the banking industry. Course work is designed to provide the banking industry with skilled employees who possess strong communication, math, critical thinking, computer skills, and knowledge of banking processes and procedures.

The Business Technology Medical Transcription program of study will prepare the student for employment as a medical transcriptionist and to be a participating member of the healthcare team. Students will acquire skills to transcribe medical dictation or code medical records with accuracy, clarity, and timeliness, while applying the principles of professional and ethical conduct.

Business Technology

Curriculum in Business Technology Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
BUS 0903	Keyboarding w/ Lab (or elective if competency is met)	3
BUS 1003	Business English	3
ENGL 0303	or Foundational Composition	
ENGL 1013	or Composition I	
BUS 1023	Business Mathematics	3
MATH 0803	or Beginning Algebra (or higher math)	
BUS 1073	Accounting	3
BUS 1303	Introduction to Computers	3
	Total	15
2nd Semester		
BUS 1013	Word Processing I	3
BUS 1033	Administrative Support Procedures	3
BUS 1043	Professional Communication	3
BUS 1053	Spreadsheets	3
BUS 2133	Multimedia	3
	Total	15
3rd Semester		
BUS 2113	Word Processing II	3
BUS 2123	Computer Applications for Accounting	3
	Total	6

**Business
Technology Option
Associate of
Applied Science**

**Curriculum in Business Technology Option Associate of Applied Science Degree in Business
Technology**

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1013	Word Processing I	3
BUS 1073	Accounting	3
COMS 1003 or COMS 2003 or BUS 1303	Introduction to Computer Based Systems or Microcomputer Applications or Introduction to Computers	3
ENGL 1013	Composition I	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	15
2nd Semester		
BUS 1033	Administrative Support Procedures	3
BUS 1053	Spreadsheets	3
BUS 1063	Legal Environment for Business Technology	3
BUS 2113	Word Processing II	3
ENGL 1023	Composition II	3
	Total	15
3rd Semester		
BUS 1043	Professional Communication	3
BUS 1083	Introduction to Economics	3
BUS 2123	Computer Applications for Accounting	3
BUS 2133	Multimedia	3
BUS 2143	Introduction to Management	3
	Total	15
4th Semester		
	Any Approved Social Science ¹	3
BUS 2153	Database Management	3
BUS 2163	Desktop Publishing	3
BUS 2903	Internship (or approved elective)	3
BUS 2993	Special Topics for Business Technology	3
	Total	15
	¹See appropriate alternatives or substitutions in "General Education Requirements".	

**Business
Technology
Banking**

Curriculum in Business Technology - Banking Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
BUS 0903	Keyboarding w/Lab (or other elective if competency met)	3
BUS 1003 or ENGL 0303 or ENGL 1013	Business English or Foundational Composition or Composition I	3
BUS 1303	Introduction to Computers	3
BUS 2313	Deposit Operations	3
	Total	15
2nd Semester		
BUS 1013	Word Processing I	3
BUS 1033	Administrative Support Procedures	3
BUS 1053	Spreadsheets	3
BUS 1083	Introduction to Economics	3
BUS 2303	Money and Banking	3
BUS 2333	Loan Operations	3
	Total	18
3rd Semester		
BUS 1073	Accounting	3
BUS 1043	Professional Communication	3
	Total	6

**Business
Technology
Banking Option
Associate of
Applied Science**

Curriculum in Business Technology - Banking Option Associate of Applied Science Degree in Business Technology

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1073	Accounting	3
BUS 2303	Money and Banking	3
BUS 2313	Deposit Operations	3
BUS 1303	Introduction to Computers	3
COMS 1003	or Introduction to Computer Based Systems	
COMS 2003	or Microcomputer Applications	
ENGL 1013	Composition I	3
	Total	15
2nd Semester		
BUS 1013	Word Processing I	3
BUS 1033	Administrative Support Procedures	3
BUS 1043	Professional Communication	3
BUS 2333	Loan Operations	3
ENGL 1023	Composition II	3
	Total	15
3rd Semester		
BUS 1053	Spreadsheets	3
BUS 1083	Introduction to Economics	3
BUS 2123	Computer Applications for Accounting	3
BUS 2143	Introduction to Management	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	15
4th Semester		
	Any Approved Social Science ¹	3
BUS 1063	Legal Environment for Business Technology	3
BUS 2153	Database Management	3
BUS 2903	Internship (or approved elective)	3
BUS 2993	Special Topics for Business Technology	3
	Total	15
	¹ See appropriate alternatives or substitutions in "General Education Requirements"	

Career Pathways Initiative

**Program
Coordinator
Tara Johnson**

The Arkansas Career Pathways Initiative is a new program that enables Arkansas Tech University – Ozark Campus to offer, to those who qualify, help with overcoming the barriers that keep parents from receiving the training and education needed to succeed in today's workforce. Career Pathways provides parents with services and resources needed to capture high wage / high demand careers.

Career Pathways provides a framework for connecting a series of educational programs with integrated work experience and support services. This combination of structured learning creates achievable stepping-stones for career advancement of adult workers and increases the pool of qualified workers needed by Arkansas employers.

Features of the Career Pathways program include:

- An educational pathway that starts with employability skills and adult education.
- "Bridge" programs that prepare educationally disadvantaged students to enter college-level academic courses by teaching developmental or basic skills, saving the student both time and money. Includes specialized assistance to improve skills necessary for competency exams, such as the Nursing Entrance Test.
- Enhanced student services that include career assessment, advising, and tutoring to enhance student success. Also includes job search skills, training, and job placement assistance.
- Credentials for specific occupations that can be built upon as the student advances in his or her career and education.
- Outreach via community-based organizations and other groups to recruit and serve students underrepresented in higher education.
- Internship and student mentoring services for real-world experience as well as increased job placement outcomes.
- Career Pathways may be able to assist eligible parents with fuel, child care, books, tuition, supplies, and testing fees. Assistance is limited by available funds and program guidelines and state priority goals.

Eligibility

You must be a parent with children under age 21 living in your home
You must be receiving Department of Human Services benefits such as Food Stamps, ARKids First, Transitional Employment Assistance (TEA) benefits, OR have an annual income below 250% of the federal poverty level as specified below:

Size of Family	Annual Income Limit
2	\$36,425
3	\$45,775
4	\$55,125
5	\$64,475
6	\$73,825
7	\$83,175
8	\$92,525
For each additional person, add \$9,350	

Location:

Student Services and Conference Center
Arkansas Tech University – Ozark Campus, Rooms 110 and 111
1700 Helberg Lane
Ozark, AR 72949
479 667-0695

Collision Repair Technology

Program Chair
Stan Hatcher
Shop Complex
(479) 508-3312
shatcher@atu.edu

Instructor
Kendall Hopkins

The work of the collision repair technician consists of those jobs that require knowledge of automotive construction and a relatively high degree of manual dexterity. Students enrolled in this program will become skilled in frame alignment, dent removal, replacing damaged parts, color matching, painting, and basic principles of air brushing. Students will receive instruction in solvent-based paints and in the implementation of green technology with water-bourne paints.

Each student will be required to furnish their own tools as approved by the instructor.

Collision Repair Technology

Curriculum in Collision Repair Technology Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
CRT 1103	Automotive Welding	3
CRT 1114	Metal Repair I	4
CRT 1124	Painting I	4
CRT 1134	Color Matching I	4
	Total	15
Spring		
BUS 1003	Business English	3
ENGL 0303	or Foundational Composition	
ENGL 1013	or Composition I	
CRT 1214	Metal Repair II	4
CRT 1224	Painting II	4
CRT 1234	Color Matching II	4
	Total	15
1st Summer		
CRT 1312	Air Brushing	2
CRT 1322	Detailing	2
CRT 1332	Cost Analysis of Collision Repair	2
	Total	6

Curriculum in Collision Repair Technology Associate of Applied Science Degree in Business Technology

Course Number	Course Name	Semester Hours
1st Semester		
CRT 1103	Automotive Welding	3
CRT 1114	Metal Repair I	4
CRT 1124	Painting I	4
CRT 1134	Color Matching I	4
	Total	15
2nd Semester		
CRT 1214	Metal Repair II	4
CRT 1224	Painting II	4
CRT 1234	Color Matching II	4
ENGL 1013	Composition I	3
	Total	15
3rd Semester		
	Any Approved Social Science ¹	3
CRT 1312	Air Brushing *	2
CRT 1322	Detailing *	2
CRT 1332	Cost Analysis of Collision Repair *	2
ENGL 1023	Composition II	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	15
4th Semester		
AST 1003	Automotive Electronics	3
AST 1103	Automotive Brake Systems	3
AST 1203	Automotive Climate Control*	3
AST 1213	Automotive Chassis and Steering	3
BUS 1303	Introduction to Computers	3
COMS 1003	or Introduction to Computer Based Systems	
COMS 2003	or Microcomputer Applications	
	Total	15
	¹ See appropriate alternatives or substitutions in "General Education Requirements"	
	*Usually offered in Summer I term	

Computer Information Systems

Program Chair
Kale Rudolph
Administration Bldg
(479) 508-3323
brudolph@atu.edu

With the growing importance of computers in the workplace and the emphasis on more sophisticated technologies, qualified computer technicians are in high demand. This program is designed to provide individuals with the knowledge and skills needed to become network administrators. Training includes microcomputer operating systems, basic networking skills, computer repair and troubleshooting skills, and Internet knowledge. This program of study prepares students to sit for the A+ Certification exam.

**Computer
 Information
 Systems**

Curriculum in Computer Information Systems Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
BUS 1023 or MATH 0803	Business Mathematics or Beginning Algebra (or higher math)	3
BUS 1303 or COMS 1003 or COMS 2003	Introduction to Computers or Microcomputer Applications or Introduction to Computer Based Systems	3
CIS 1113	Fundamentals of Computer Operation	3
CIS 1153	Networking I	3
CIS 1213	Operating Systems	3
	Total	15
Spring		
BUS 1003 ENGL 0303 ENGL 1013	Business English or Foundational Composition or Composition I	3
CIS 1103	Programming I	3
CIS 1253	Networking II	3
CIS 1243	HTML	3
CIS 1303	PC Maintenance I	3
	Total	15
Summer I		
	Approved Elective Credit	6
	Total	6

Approved electives include (but are not limited to): **BUS 2153** Database Management, any additional CIS course, any ICS course. Electives must be approved by the program director.

Curriculum in Computer Information Systems Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
Fall		
MATH 0903	Intermediate Algebra (or higher math)	3
BUS 1303	Introduction to Computers	3
CIS 1113	Fundamentals of Computer Operation	3
CIS 1153	Networking I	3
CIS 1213	Operating Systems	3
	Total	15
Spring		
ENGL 1013	Composition I	3
CIS 1103	Programming I	3
CIS 1253	Networking II	3
CIS 1243	HTML	3
CIS 1303	PC Maintenance I	3
	Total	15
Summer I		
	Approved Elective Credit	6
	Total	6
Fall		
ENGL 1023	Composition II	3
CIS 2133	Web Page Design	3
CIS 1203	Programming II	3
	Approved Elective	3
	Total	12
Spring		
	Any Approved Social Science	3
CIS 2143	Help Desk Support	3
CIS 2153	Programming in C++	3
CIS 1233	Systems Analysis and Design	3
	Total	12

Approved electives include (but are not limited to): BUS 2153 Database Management, any additional CIS course, any ICS course. Electives must be approved by the program director.

Cosmetology

Program Chair
Cathy Fultz
Administration Bldg
(479) 508-3320
cfultz@atu.edu

Instructor
Debbie Neumeier

This program is designed to prepare students for professional licensing in the cosmetology field. Students are taught the basic techniques of hair care, chemical relaxing, professional ethics, sanitation, manicuring, facials, salon management, and rules and regulations as designated by the state.

The Arkansas State Health Department Cosmetology Division requires an individual to successfully complete 1500 clock hours in order to qualify for the state cosmetology licensing examination. In addition to admission requirements for this program, a student must submit a copy of their social security number, drivers license, copy of high school transcript or proof of GED, and a \$20 money order made payable to the Arkansas Board of Cosmetology for a temporary training permit.

Cosmetology

Curriculum in Cosmetology Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
COS 1101	Hygiene and Sanitation I	1
COS 1110	Hairdressing I w/Lab	10
COS 1121	Related Science I	1
COS 1131	Manicuring I	1
COS 1141	Cosmetic Therapy I	1
COS 1151	Salesmanship, Shop Management and Shop Department I	1
	Total	15
2nd Semester		
COS 1201	Hygiene and Sanitation II	1
COS 1210	Hairdressing II w/Lab	10
COS 1221	Related Science II	1
COS 1241	Cosmetic Therapy II	1
COS 1251	Salesmanship, Shop Management and Shop Department II	1
	Total	14
Summer Term		
COS 1231	Manicuring II	1
COS 2405	Theory and Practical Application	5
	Total	6
3rd Semester		
COS 2301	Hygiene and Sanitation III	1
COS 2310	Hairdressing III w/Lab	10
COS 2321	Related Science III	1
COS 2331	Manicuring III	1
COS 2341	Cosmetic Therapy III	1
COS 2351	Salesmanship, Shop Management and Shop Department III	1
	Total	15

Curriculum in Cosmetic Science Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
1st Semester		
COS 1101	Hygiene and Sanitation I	1
COS 1110	Hairdressing I w/Lab	10
COS 1121	Related Science I	1
COS 1131	Manicuring I	1
COS 1141	Cosmetic Therapy I	1
COS 1151	Salesmanship, Shop Management and Shop Department I	1
	Total	15
2nd Semester		
COS 1201	Hygiene and Sanitation II	1
COS 1210	Hairdressing II w/Lab	10
COS 1221	Related Science II	1
COS 1231	Manicuring II*	1
COS 1241	Cosmetic Therapy II	1
COS 1251	Salesmanship, Shop Management and Shop Department II	1
	Total	15
3rd Semester		
COS 2301	Hygiene and Sanitation III	1
COS 2310	Hairdressing III w/Lab	10
COS 2321	Related Science III	1
COS 2331	Manicuring III	1
COS 2341	Cosmetic Therapy III	1
COS 2351	Salesmanship, Shop Management and Shop Department III	1
ENGL 1013	Composition I	3
	Total	18
4th Semester		
	Any Approved Social Science ¹	3
COMS 1003	Introduction to Computer Based Systems	3
COMS 2003	Microcomputer Applications	
BUS 1303	Introduction to Computers	
COS 2405	Theory and Practical Application*	5
ENGL 1023	Composition II	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	17
	¹ See appropriate alternatives or substitutions in "General Education Requirements"	
	*Usually offered in Summer I term	

Enology

Enology

The Technical Certificate in Enology allows the learner to demonstrate wine making applications and theory in the wine production process. Students completing this technical certificate will be prepared for entry to mid-level positions in the wine making industry. The Altus vineyards and wineries, due to their proximity to the Ozark Campus, provide employment and internship opportunities, entrepreneurial support, as well as professional growth opportunities for those currently employed.

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1003 ENGL 0303 ENGL 1013	Business English or Foundational Composition or Composition I	3
BUS 1023 MATH 0903	Business Mathematics or Intermediate Algebra (or higher math)	3
VIN 1463	Introduction to Enology	3
VIN 2103	Introduction to Wine Microorganisms	3
	Total	12
2nd Semester		
CHEM 1114	Survey of Chemistry	4
VIN 2683	Wine and Must Analysis	3
VIN 1593	Grape Varieties of Mid America (Ark Wines)	3
VIN 1483	Winery Sanitation	3
VIN 1602	Winery Equipment Operations	2
	Total	15
3rd Semester		
VIN 2463	Intermediate Enology	3
VIN 2592	Cellar Operation Technology	2
VIN 2663	Sensory Evaluation	3
VIN 2573	Fall Wine Production Internship	3
	Total	11

Industrial Control Systems

Program Chair
Ron Hutain
Electronics Bldg
(479) 508-3328
rhutain@atu.edu

Instructor
Jody Chrisman

Industrial Control Systems provides for a study of components, circuits, instruments and control techniques used with Industrial Automated Systems. Students will develop skills sets which enable the integration of: electronics, mechanics, pneumatics, hydraulics and computer controls. The focus of study is on two main areas, one is control techniques for industrial components, such as electric motors, variable-speed drives, programmable logic controllers, servomechanisms and sensors. The second area of concentration is the computer system itself, this will allow the student to have an understanding of how to repair, upgrade, or network a complete computer system, both hardware and software. The intent of this program is to prepare the student to deal with a broad concept of automation technology. The diverse educational training provides for a host of integrated skills that can be applied in a variety of job contexts to include: green energy technology, electronics, medical, manufacturing, and production.

Industrial Control Systems

Curriculum in Industrial Control Systems Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
ICS (CIS) 1103	Programming I	3
ICS 1104	Fundamentals of Electricity	4
ICS 1123	Semiconductors I	3
ICS (CIS) 1143	Introduction to Digital Logic*	3
ICS (CIS) 1153	Networking I	3
	Total	16
2nd Semester		
ICS (CIS) 1253	Networking II	3
ICS (CIS) 1303	PC Maintenance	3
ICS 2203	Computer System Components	3
ICS 2213	Semiconductors	3
	Total	12
3rd Semester		
ICS 2115	Programmable Controllers	5
ICS 2116	Basics of Industrial Automation	6
ICS 2123	Industrial Fluid Power	3
	Total	14
	*Usually offered in Summer I term	

Curriculum in Industrial Control Systems Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
1st Semester		
ICS (CIS) 1103	Programming I	3
ICS 1104	Fundamentals of Electricity	4
ICS 1123	Semiconductors I	3
ICS (CIS) 1143	Introduction to Digital Logic *	3
ICS (CIS) 1153	Networking I	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	19
2nd Semester		
ICS (CIS) 1253	Networking II	3
ICS (CIS) 1303	PC Maintenance	3
ICS 2203	Computer System Components	3
ICS 2213	Semiconductors II	3
ENGL 1013	Composition I	3
	Total	15
3rd Semester		
ICS 2115	Programmable Controllers	5
ICS 2116	Basics of Industrial Automation	6
ICS 2123	Industrial Fluid Power	3
	Total	14
4th Semester		
	Any Approved Social Science ¹	3
BUS 1303	Introduction to Computers	3
or		
COMS 1003	Introduction to Computer Based Systems	
or		3
COMS 2003	Microcomputer Applications	
ICS 2903	Internship (or approved elective)	3
ENGL 1023	Composition II	3
	Total	12
	¹ See appropriate alternatives or substitutions in "General Education Requirements"	
	*Usually offered in Summer I term	

Industrial Systems

Industrial Systems

The Technical Certificate in Industrial Electronic Technology is designed to enhance the technical skills and job-related knowledge of individuals who are currently employed in the industrial field as well as other persons seeking careers in Industrial Systems. 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 on campus, at off-site industrial locations and on the web. Courses taken for the certificate may be applied to the Associate of Applied Science degree in Industrial Systems.

Curriculum in Industrial Electronic Technology Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
ICS 1004	Fundamentals of Electricity	4
ICS 1123	Semiconductors I	3
ICS 2123	Industrial Fluid Power	3
	Approved Elective Credit	3
	Total	13
Spring		
ICS 2213	Semiconductors II	3
	Approved Elective Credit	2
BUS 1003 or ENGL 0303 or ENGL 1013	Business English or Foundational Composition or Composition I	3
BUS 1023 or MATH 0803	Business Mathematics or Beginning Algebra	3
	Total	11
Summer I		
ICS 1143	Introduction to Digital Logic	3
	Approved Elective Credit	3
	Total	6

The Industrial Systems program leads to the Associate of Applied Science degree. This program is designed to: (1) prepare students for jobs in the use and maintenance of common electrical and electronic instruments along with industrial machines and equipment, and (2) enhance the technical skills and job-related knowledge of persons who are currently employed in the industrial field or anticipating a career in a related field.

Courses in general areas related to electronics and maintenance for industry are combined with general education courses to provide a firm foundation in basic electronics, math, and writing skills. Instruction also includes power distribution, programmable logic controllers, hydraulic power, welding, and basic machining. Emphasis is placed on troubleshooting skills and preventive maintenance techniques.

Curriculum in Industrial Systems Associate of Applied Science Degree

Course Number	Course Name	Semester Hours
Fall		
ICS 1004	Fundamentals of Electricity	4
ICS 1103	Programming I	3
ICS 1123	Semiconductors I	3
ICS 2123	Industrial Fluid Power	3
	Approved Elective Credit	3
	Total	16
Spring		
ICS 1303	PC Maintenance I	3
ICS 2213	Semiconductors II	3
ENGL 1013	Composition I	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Approved Elective Credit	2
	Total	14
Summer I		
ICS 1143	Introduction to Digital Logic	3
	Approved Elective Credit	3
	Total	6
Fall		
ENGL 1023	Composition II	3
ICS 1153	Networking I	3
ICS 2115	Programmable Controllers	5
ICS 2116	Basics of Industrial Automation	6
	Total	17
Spring		
BUS 1303 or COMS 1003 or COMS 2003	Introduction to Computers or Introduction to Computer Based Systems or Microcomputer Applications	3
ICS 1253	Networking II	3
ICS 2203	Computer System Components	3
	Any Approved Social Science	3
	Total	12
Approved electives include but are not limited to: ACR 1205, ACR 1222, ACR 1602, ACR 2114, ACR 2134, ICS 1303, ICS 2303, ICS 2991-6, INT 2903.		

Law Enforcement

Law Enforcement

The law enforcement program provides students the skill set and knowledge necessary to prepare to enter the law enforcement field as well as provide promotional opportunities for those currently employed in law enforcement. This program, designed with the assistance and support of surrounding law enforcement agencies, offers a competitive advantage to potential law enforcement employees as a precursor or supplement to police academy training. This program will enhance critical communications skills, computer skills, and knowledge of the legal system and current legislation.

Curriculum in Law Enforcement Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1003 or ENGL 0303 or ENGL 1013	Business English Foundational Composition Composition I	3
BUS 1023 or MATH 0803 or MATH 0903	Business Math Beginning Algebra Intermediate Algebra	3
BUS 1303	Introduction to Computers	3
LE 1003	Introduction to Law Enforcement	3
LE 1013	American Legal System	3
	Total	15
2nd Semester		
EMTP 1001	CPR and First Aid	1
LE 1023	Judicial Process	3
LE 1043	Criminal, Civil, and Juvenile Law	3
LE 1053	Spanish for Law Enforcement	3
	Elective Coursework1	5
	Total	15
3rd Semester		
LE 1033	Public Relations in Law Enforcement	3
	Elective Coursework1	3
	Total	6
	* Elective coursework recommended include: EMTP 1006 Basic EMT, courses in Computer Information Systems, courses in Business, or courses offered by Arkansas Tech University - Russellville Campus	

Curriculum in Law Enforcement Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1303	Introduction to Computers	3
ENGL 1013	Composition I	3
LE 1003	Introduction to Law Enforcement	3
LE 1013	American Legal System	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	15
2nd Semester		
EMTP 1003	Medical First Responder	3
ENGL 1023	Composition II	3
LE 1023	Judicial Process	3
LE 1043	Criminal, Civil, and Juvenile Law	3
LE 1053	Spanish for Law Enforcement	3
	Total	15
3rd Semester		
ANTH 1003 or PSY 2003 or SOC 1003	Introduction to Anthropology General Psychology Introduction to Sociology	3
BUS 1043	Professional Communication	3
LE 1033	Public Relations in Law Enforcement*	3
LE 2003	Interview, Interrogation, and Testimony	3
	Elective Coursework**	3
	Total	15
4th Semester		
BUS 2133	Multimedia	3
EMTP 1001	CPR and First Aid	1
LE 2013	Introduction to Computer Crime	3
LE 2903	Internship (or approved elective)	3
	Elective Coursework**	5
	Total	15
	* Offered in Summer I 2008 ** Elective coursework recommended include: EMTP 1006 Basic EMT, courses in Computer Information Systems, courses in Business, or courses offered by Arkansas Tech University - Russellville Campus	

Paramedic/Emergency Medical Services

Program Chair
Ritchie Powers
Health Bldg
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Instructor
Lance Greathouse
Paramedic

This program is designed to meet the educational and training needs of those individuals who wish to gain Arkansas Department of Health Licensure and National Registry of EMT's Certification as a Paramedic. Career opportunities exist with air and ground emergency medical services, fire departments, medical centers and industry. Among other characteristics, a Paramedic should possess dignity, empathy and tolerance. Under the direction of a physician, the student will be presented with arterial to aid them in: assessment of the pre-hospital needs of the acutely ill or injured patient, triage, basic as well as advanced life support, communication skills and maintaining the level of care as the patient is transported to a health care facility.

The student must complete all courses in the previous semester with at least 75% to be eligible for the next level of the Paramedic program. Students must also pass the end of course assessment to be recommended for the National Registry of EMT's exam. Arkansas EMT certification must be obtained by the student prior to enrollment in **EMTP 1223 Clinical Practicum I** and **EMTP 1231 Lab I**.

Curriculum in Emergency Medical Technician Certificate of Proficiency

Course Number	Course Name	Semester Hours
EMTP 1007	Emergency Medical Technician	7
	Total	7

Note: In order for the Certificate of Proficiency to be awarded, a grade of "C" must be earned in **EMTP 1007**.

Curriculum in Advanced Emergency Medical Technician Certificate of Proficiency

Course Number	Course Name	Semester Hours
EMTP 1107	Advanced Emergency Medical Technician	7
	Total	7

Note: In order for the Certificate of Proficiency to be awarded, a grade of "C" must be earned in **EMTP 1007**.

Curriculum in Paramedic Technical Certificate

Course Number	Course Name	Semester Hours
Prerequisites		
EMTP 1007 or EMTP 1107	Emergency Medical Technician or Advanced Emergency Medical Technician	7
EMTP 1103	Life Span Development	3
EMTP 1113	Pharmacology	3
EMTP 1133	Anatomy and Physiology	3
	Total	16
Summer I		
EMTP 1213	Pre-Hospital Environment	3
EMTP 1223	Clinical Practicum I	3
EMTP 1231	Lab I	1
	Total	7
Fall		
EMTP 1303	Cardiology	3
EMTP 1304	Medical Emergencies I	4
EMTP 1305	Clinical Practicum II	5
EMTP 1331	Lab II	1
	Total	13
Spring		
EMTP 1401	Lab III	1
EMTP 1403	Medical Emergencies II	3
EMTP 1413	Clinical Practicum III	3
EMTP 1424	Paramedic Internship I	3
EMTP 1423	Trauma Management	4
	Total	14
Summer I		
EMTP 1504	Paramedic Internship II	4
EMTP 1512	Assessment Based Management	2
	Total	6

Curriculum in Paramedic Associate of Applied Science Degree in Allied Health

Course Number	Course Name	Semester Hours
Fall		
BUS 1303 or COMS 1003 or COMS 2003	Introduction to Computers or Introduction to Computer Based Systems or Microcomputer Applications	3
EMTP 1007 or EMTP 1107	Emergency Medical Technician or Advanced Emergency Medical Technician	7
MATH 0903	Intermediate Algebra	3
	TOTAL	13
Spring		
	Any approved Social Science	3
EMTP 1103	Life Span Development	3
EMTP 1113	Pharmacology	3
EMTP 1133	Anatomy and Physiology	3
ENGL 1013	Composition 1	3
	Total	15
Summer I		
EMTP 1213	Pre Hospital Environment	3
EMTP 1223	Clinical Practicum I	3
EMTP 1231	Lab I	1
	Total	7
Fall		
EMTP 1303	Cardiology	3
EMTP 1304	Medical Emergencies I	4
EMTP 1305	Clinical Practicum II	5
EMTP 1331	Lab II	1
ENGL 1023	Composition II	3
	Total	16
Spring		
EMTP 1401	Lab III	1
EMTP 1403	Medical Emergencies II	3
EMTP 1413	Clinical Practicum III	3
EMTP 1424	Paramedic Internship I	3
EMTP 1423	Trauma Management	4
	Total	14
Summer I		
EMTP 1504	Paramedic Internship II	4
EMTP 1512	Assessment Based Management	2
	Total	6

Physical Therapist Assistant

Program Chair
Daniel Curtis
Health Building
(479) 508-3354
dcurtis7@atu.edu

Instructor
Leann Goines

The Physical Therapist Assistant program integrates classroom theory with clinical lab practice. It is designed to prepare successful graduates for entry-level employment in the field as Physical Therapist Assistants. The Physical Therapist Assistant is an educated health care provider who works under the direction and supervision of a licensed Physical Therapist and assists in the provision of physical therapy. The Physical Therapist Assistant provides specially prescribed treatments and exercises through a plan of care developed by the physical therapist that are aimed at improving mobility; relieving pain; or preventing and /or limiting physical disability.

Prior to admission, students must complete a platform of 28 hours which includes general education and medical courses. Students must submit an application to the program and meet entrance requirements for acceptance into the Physical Therapist Assistant program.

*The Physical Therapist Assistant Program at Arkansas Tech University-Ozark Campus has been granted Candidate for Accreditation status by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association (1111 North Fairfax Street, Alexandria, Virginia 22314; telephone: 703-706-3245; email: accreditation@apta.org; website: www.capeonline.org). Candidacy for Accreditation is a pre-accreditation status of affiliation with the Commission on Accreditation in Physical Therapy Education that indicates the program is progressing toward accreditation.

Physical Therapist Assistant

Curriculum in Physical Therapist Assistant Associate of Applied Science Degree in Physical Therapy Assistant

Course Number	Course Name	Semester Hours
HIT1123	Introduction to Human Anatomy	3
HIT1113	Medical Terminology	3
BUS 1303 or COMS 1003 or COMS 2003	Introduction to Computers Introduction to Computer Based Systems Microcomputer Applications	3
ENGL 1013	Composition I	3
MATH 1113	College Algebra	3
	Total	15
Spring		
HIT 2203	Human Anatomy and Physiology	3
ENGL 1023	Composition II	3
PHSC 1013	Introduction to Physical Science	3
PHSC 1021	Introduction to Physical Science Lab	1
PSY 2003	General Psychology	3
	Total	13
Summer I (Extended length term to extend through Summer II)		
PTA 1121	Clinical Kinesiology Lab	1
PTA 1122	Clinical Kinesiology	2
PTA 1132	Pathological Conditions	2
PTA 1231	Therapeutic Procedures I Lab	1
PTA 1232	Therapeutic Procedures I	2
PTA 1241	Principles of Physical Therapy Lab	1
PTA 1243	Principles of Physical Therapy	3
PTA 1251	Data Collection in Physical Therapy Lab	1
	Total	13
Fall		
PTA 2112	Therapeutic Procedures II Lab	2
PTA 2113	Therapeutic Procedures II	3
PTA 2121	Neurological Development and Motor Control	1
PTA 2142	Therapeutic Ex. and Cardiopulmonary Rehab Lab	2
PTA 2143	Therapeutic Ex. and Cardiopulmonary Rehab	3
PTA 2151	Administrative Procedures	1
PTA 2164	Clinical Experience I	4
	Total	16
Spring		
PTA 2211	Musculoskeletal Rehab Lab	1
PTA 2212	Musculoskeletal Rehab	2
PTA 2221	Neurological Rehab Lab	1
PTA 2222	Neurological Rehab	2
PTA 2234	Clinical Experience II	4
PTA 2235	Clinical Experience III	5
	Total	15

Practical Nursing

Program Chair
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jmickens@atu.edu

Instructors
Theresa Fontaine
Natalie Helmert
Ester Leonard

Clinical Instructors
Debra Hines
Bobbie Lewis

The Practical Nursing program of ATU-Ozark Campus is an entry level 15-month, 3 semester nursing course. Upon completion of the program the student will receive a certificate in Practical Nursing. The course integrates theory with clinical practice. Theoretical content is based on the concept of holism in which the physical, emotional, social, and spiritual well-being is considered. Clinical experiences will be obtained in the following health care service areas: adult health, maternal-child, mental health, geriatrics, pediatrics.

Upon completion of the program, the student will be eligible to make application for the NCLEX-PN exam for licensure. State and FBI background checks are required of each student by the Arkansas State Board of Nursing when applying for licensure exam. An applicant may be denied permission to write based on background check results.

Students are required to complete and pass with a passing minimum of 80% the ATI Standardized PN Assessment prior to being certified to make application for the NCLEX.

Students wishing to enroll in the practical nursing program should submit an application to the University with an official high school transcript, or GED transcript, and all college transcripts by June 1st for the August Class and October 1st for the January class.

To be eligible to apply to the Practical Nursing program, students must supply the Office of Student Services a COMPASS, ACT, or SAT score report verifying that remediation in English, mathematics, and reading is not required; or complete the appropriate remedial coursework with a grade of "C" or better to satisfy remediation requirements. Students who speak English as a second language shall meet the same admission requirements.

Practical Nursing

Complete the required Pre-requisite course:

BUS 2213 Intro to Human Anatomy,
BUS 2233 Medical Terminology,

EMTP 1001 First aid and CPR or hold a current CPR for Health Care Providers certification.

Submit an application to the Nursing Department, and schedule an appointment with a Nursing Department faculty member.

Applications not submitted by the deadline or incomplete applications will not be considered for that semester's class.

Schedule the TEAS (Test of Essential Academic Skills) exam with the Office of Student Services.

Attend the scheduled Nursing Department Pre-orientation meeting.

Student Nursing Applications may be withdrawn if all of the above criteria are not met. Students not meeting required criteria may be required to reapply to the Practical Nursing program.

Meeting the minimum requirements for admission to the university does not guarantee admission to the practical nursing program.

Minimum Requirements for Graduation with a Technical Certificate

Course.....	Theory Clock Hours
Vocational, Legal and Ethical Concepts.....	15 Hours
Body Structure and Function.....	90 Hours
Nursing of the Geriatric Patient.....	15 Hours
Nutrition in Health and Illness.....	15 Hours
Basic Nursing Principles and Skills.....	150 Hours
Nursing of Adult Patients with Medical/Surgical Conditions.....	90 Hours
Nursing of Mothers and Infants.....	45 Hours
Nursing of Children.....	45 Hours
Mental Health and Care of the Mentally Ill.....	45 Hours
Pharmacology.....	90 Hours
Theory/Clinical Hours.....	600/768 Hours

1368 Total Program Hours

Curriculum in Certified Nursing Assistant Certificate of Proficiency

Course Number	Course Name	Semester Hours
CNA 1114	Basic Nursing Principals and Skills I	4
BUS 2233	Medical Terminology	3
	Total	7

Curriculum in Practical Nursing Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
LPN 1101	Vocational, Legal and Ethical Concepts	1
LPN 1102	Pharmacology I	2
LPN 1111	Nursing of the Geriatric Patient	1
LPN 1114	Basic Nursing Principles and Skills I	4
LPN 1115	Clinical I	5
LPN 1121	Nutrition in Health and Illness	1
LPN 1122	Body Structure and Function	2
LPN 1171	Nursing of Adults with Medical/Surgical Conditions I	1
	Total	17
2nd Semester		
LPN 1202	Nursing of Adults with Medical/Surgical Conditions II	2
LPN 1203	Nursing of Mothers and Infants	3
LPN 1210	Clinical II	10
LPN 1211	Basic Nursing Principles and Skills II	1
LPN 1221	Pharmacology II	1
	Total	17
3rd Semester		
LPN 1302	Nursing of Children	2
LPN 1303	Nursing of Adults with Medical/Surgical Conditions III	3
LPN 1312	Clinical III	12
LPN 1322	Mental Health	2
	Total	19

Curriculum in Allied Health Associate of Applied Science Degree in Allied Health

The A.A.S. in Allied Health with a Practical Nursing option is intended to be a "feeder program" to the BSN program at the Russellville campus. This degree prepares the graduate to sit for licensure in Practical Nursing and does not result in an RN credential.

Course Number	Course Name	Semester Hours
1st Semester		
Summer Terms (I&II)		
COMS 1003	Introduction to Computer Based Systems	3
COMS 2003	or Microcomputer Applications	
BUS 1303	or Introduction to Computers	
ENGL 1013	Composition I	3
MATH 0903	Intermediate Algebra (or higher math)	3
	Total	9
2nd Semester		
Fall		
LPN 1101	Vocational, Legal and Ethical Concepts	1
LPN 1102	Pharmacology I	2
LPN 1111	Nursing of the Geriatric Patient	1
LPN 1114	Basic Nursing Principles and Skills I	4
LPN 1115	Clinical I	5
LPN 1121	Nutrition in Health and Illness	1
LPN 1122	Body Structure and Function	2
LPN 1171	Nursing of Adults with Medical/Surgical Conditions I	1
	Total	17
2nd Semester		
Spring		
LPN 1202	Nursing of Adults with Medical/Surgical Conditions II	2
LPN 1203	Nursing of Mothers and Infants	3
LPN 1210	Clinical II	10
LPN 1211	Basic Nursing Principles and Skills II	1
LPN 1221	Pharmacology II	1
	Total	17
3rd Semester		
Summer Terms (I&II)		
ENGL 1023	Composition II	3
PSY 2003	General Psychology	3
	Total	6
4th Semester		
Fall		
LPN 1302	Nursing of Children	2
LPN 1303	Nursing of Adults with Medical/Surgical Conditions III	3
LPN 1312	Clinical III	12
LPN 1322	Mental Health	2
	Total	19

Viticulture

Viticulture

The Technical Certificate in Viticulture allows the learner to demonstrate the application of specific agricultural knowledge, techniques, and theories to improve vineyard health. Students completing this technical certificate will be prepared for entry to mid-level positions in the grape growing industry. The Altus vineyards and wineries, due to their proximity to the Ozark Campus, provide employment and internship opportunities. Students will also have access to entrepreneurial support along with professional growth opportunities for those currently employed.

Curriculum in Viticulture Technical Certificate

Course Number	Course Name	Semester Hours
1st Semester		
BUS 1303	Intro to Computers	3
BUS 1003 or ENGL 0303 or ENGL 1013	Business English Foundational Composition Composition I	3
BUS 1023 or MATH 0903	Business Mathematics Intermediate Algebra or Higher Math	3
BIOL 2134	Principles of Botany	4
VIN 1113	Intro to Viticulture and Vineyard Establishment	3
	Total	16
2nd Semester		
CHEM 1114	Survey of Chemistry	4
VIN 1132	Winter Viticulture Technology	2
VIN 2112	Integrated Pest Management	2
VIN 2132	Midwest Vineyard Management	2
VIN 1142	Spring Viticulture Technology	2
	Total	14
3rd Semester		
VIN 2363	Grape Varieties of Mid America (Ark Grapes)	3
VIN 2933	Soils for Viticulture	3
VIN 1152	Summer/Fall Viticulture Technology	2
	Total	8

Welding Technology

Program Chair
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This program is designed to develop the skills necessary for entry into industrial and commercial welding employment. Instruction is provided in SMAW, GMAW, and GTAW welding, thermal cutting, blueprint reading and layout techniques. Students are required to take a two-part examination composed by the American Welding Society to apply for AWS Entry Level Welding Certification.

Welding Technology

Curriculum in Welding Technology Technical Certificate

Course Number	Course Name	Semester Hours
Fall		
BUS 1023	Business Mathematics	3
MATH 0803	or Beginning Algebra (or higher math)	
WLD 1103	Introduction to Thermal Cutting	3
WLD 1202	Blueprint Reading	2
WLD 1212	Industrial Safety in Welding	2
WLD 1224	Introduction to Arc Welding	4
WLD 1302	Metallurgy	2
	Total	16
Spring		
BUS 1003	Business English	3
ENGL 0303	or Foundational Composition	
ENGL 1013	or Composition I	
WLD 1405	Position Welding	5
WLD 1503	Gas Metal Arc (MIG) Welding	3
WLD 1603	Gas Tungsten Arc (TIG) Welding	3
	Total	14
1st Summer		
WLD 1702	Weldment Testing	2
WLD 1804	Certification Welding I	4
	Total	6

Curriculum in Welding Technology Associate of Applied Science Degree in General Technology

Course Number	Course Name	Semester Hours
1st Semester		
MATH 0903	Intermediate Algebra (or higher math)	3
WLD 1103	Introduction to Thermal Cutting	3
WLD 1202	Blueprint Reading	2
WLD 1212	Industrial Safety in Welding	2
WLD 1224	Introduction to Arc Welding	4
WLD 1302	Metallurgy	2
	Total	16
2nd Semester		
ENGL 1013	Composition I	3
WLD 1405	Position Welding	5
WLD 1503	Gas Metal Arc (MIG) Welding	3
WLD 1603	Gas Tungsten Arc (TIG) Welding	3
	Total	14
3rd Semester		
ACR 2124	Boiler Operations	5
ENGL 1023	Composition II	3
WLD 1403	Welding for Trades and Industry	2
WLD 1702	Weldment Testing I*	2
WLD 1804	Certification Welding I*	4
	Total	16
4th Semester		
	Any Approved Social Science ¹	3
ACR 2124	Sheet Metal	4
COMS 1003	Introduction to Computer Based Systems	3
COMS 2003	or Microcomputer Applications	
BUS 1303	or Introduction to Computers	
WLD 2904	Internship (or approved elective)	4
	Total	14
	¹ See appropriate alternatives or substitutions in "General Education Requirements"	
	*Usually offered in Summer I term	

